Stormwater Pollution Prevention Plan

for:

Public Works Yard
Bear Valley Community Services District
Bear Valley Springs
28999 S. Lower Valley Rd
Tehachapi, CA 93561
(661) 821-4428

SWPPP Contact(s):

Dawn Smith
Public Works Administrative Specialist
Bear Valley Community Services District
28999 S. Lower Valley Road
Tehachapi, CA 93561
(661) 821-4428

SWPPP Preparation Date:

March 14, 2022

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SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION

1.1 Facility Information.

Facility Name: Public Works Yard, Bear Valley Community Services District

Street/Location: 28999 S. Lower Valley Road

City: Tehachapi State: CA ZIP Code: 93561

County or Similar Government Subdivision: Kern County

NPDES ID (i.e., permit tracking number): CAS0085324 (if covered under a previous permit)

Primary Industrial Activity SIC code, and Sector and Subsector (2021 MSGP, Appendix D and Part 8):
L1, LF Landfill

Co-located Industrial Activity(s) SIC code(s), Sector(s) and Subsector(s) (2021 MSGP, Appendix D):
D1 Asphalt

Is your facility presently inactive and unstaffed and are there no industrial materials or activities exposed to stormwater? ☐ Yes ☒ No

Latitude/Longitude

Latitude:
35.1589929508626º N (decimal degrees)

Longitude:
118.64583996529657º W (decimal degrees)

Method for determining latitude/longitude (check one):

☒Maps ☐GPS

☐Other (please specify):

Is the facility located in Indian country? ☐ Yes ☒ No

If yes, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable).

Are you considered a "federal operator" of the facility?

Federal Operator – an entity that meets the definition of "operator" in [the 2021 MSGP] and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, operating for any such department, agency, or instrumentality. ☐ Yes ☒ No

Estimated area of industrial activity at your facility exposed to stormwater: 9.75
(to the nearest quarter acre)

Discharge Information

Does this facility discharge stormwater into a municipal separate storm sewer system (MS4)?
☐ Yes ☒ No

If yes, name of MS4 operator: N/A

Name(s) of surface water(s) that receive stormwater from your facility: Jack's Hole (Man-made Lake)

Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2021 MSGP, Appendix A)? ☐ Yes ☒ No

If Yes, identify name of the impaired water(s) (and segment(s), if applicable):

Identify the pollutant(s) causing the impairment(s):

Which of the identified pollutants may be present in industrial stormwater discharges from this facility?

Has a Total Maximum Daily Load (TMDL) been completed for any of the identified pollutants? If yes, please list the TMDL pollutants:

Does this facility discharge industrial stormwater into a receiving water designated as a Tier 2, Tier 2.5 or Tier 3 water (see definitions in 2021 MSGP, Appendix A)? ☐ Yes ☒ No

Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2021 MSGP Table 1-1)? ☐ Yes ☒ No
If Yes, which guidelines apply?

1.2 Contact Information/Responsible Parties.

Facility Operator(s):
Name: William Malinen
Address: 28999 S. Lower Valley Road
City, State, Zip Code: Tehachapi, CA 93561
Telephone Number: 661-821-4428
Email address: bmalinen@bvcsd.org

Facility Owner(s):
Name: Bear Valley Community Services District
Owner Contact Name: William Malinen
Address: 28999 S. Lower Valley Road
City, State, Zip Code: Tehachapi, CA 93561
Telephone Number: 661-821-4428

SWPPP Contact(s):
SWPPP Contact Name (Primary): William Malinen
Telephone number: 661-821-4428
Email address: bmalinen@bvcsd.org
SWPPP Contact Name (Backup): Dawn Smith
Telephone number: 661-821-4428
Email address: dsmith@bvcsd.org

1.3 Stormwater Pollution Prevention Team.

Staff Names	Individual Responsibilities
William Malinen, General Manager	Signature authority and ensures that all required reports are submitted. Responsible for implementation of the SWPPP, inspections, sampling and keeping reporting data and records. Materials storage and spill cleanup. Coordinate employee training.
Dawn Smith, Public Works Administrative Specialist	Directs any response necessary in the event of a spill; facility inspection for SWPPP, including stormwater control measures, stormwater sampling if needed. Record keeping and documentation
Larry Wiggins	Responsible of clean ups and Record keeping and documentation.
Daniel Haggard	Responsible of clean ups and Record keeping and documentation.

1.4 Site Description.

FACILITY INDUSTRIAL ACTIVITIES:

The site houses the recycling and transfer operation of construction material, including storage, loading and unloading, transportation, and conveyance of asphaltic, rock, sand, soils, solid and green waste materials. The site facilities include vehicle and truck parking areas, equipment storage areas, vehicle and equipment fueling, maintenance, and cleaning, administrative offices and equipment washing areas.

1.5 General Location Map.

The general location map for this facility can be found below and in Attachment A of this SWPPP.

1.6 Site Map.

A site map delineating the following information is included as Attachment C of this SWPPP.

- Boundaries of the property and the size of the property in acres;
- Location and extent of significant structures and impervious surfaces;
- Directions of stormwater flow;
- Locations of stormwater control measures;
- Locations of receiving waters;
- Locations of all stormwater conveyances including ditches, pipes, and swales;
- Locations of potential pollutant sources;
- Locations where significant spills or leaks have occurred;
- Locations of all stormwater monitoring points;
- Locations of stormwater inlets and discharge points;
- Locations of the following activities where such activities are exposed to precipitation:
  - fueling stations;
  - vehicle and equipment maintenance and/or cleaning areas;
  - loading/unloading areas;
  - locations used for the treatment, storage, or disposal of wastes;
  - liquid storage tanks;
  - processing and storage areas;
  - immediate access roads used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
  - transfer areas for substances in bulk;
  - machinery; and locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants.

The site map for this facility can be found in Attachment B.

SECTION 2: POTENTIAL POLLUTANT SOURCES

Section 2 describes areas at the facility where industrial materials and activities are exposed to stormwater or from which authorized non-stormwater discharges may originate. Industrial materials and activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation, or conveyance of any raw material, or waste product. Structures located in areas of industrial activity are potential sources of pollutants. As an example, this may occur when metals such as aluminum or copper are leached from the structures as a result of acid rain.

Areas identified in this SWPPP include industrial activities areas with potential pollutants or pollutant constituents identified for each activity, documentation of where potential spills and leaks could contribute pollutants to stormwater discharges, and descriptions of stormwater control measures.

2.1 Potential Pollutants Associated with Industrial Activity.

Industrial Activity	Associated Pollutants
Solid and Green Waste Transfer	PCPs pesticidies, pathogenic bacteria
Equipment and vehicle fueling	Fuel, oil, heavy metals
Outdoor Vehicle and Equipment storage and parking.	Oil, hydraulic fluids, arsenic, heavy metals, organics, fuel
Stockpiles: Base, Asphalt	Petroleum hydrocarbons
Vehicle and equipment washing areas	Oil, detergents, heavy metals, chlorinated solvents, phosphorus, salts, suspended solids

2.2 Spills and Leaks.

- Potential spills and leaks: A description of where potential spills and may could occur at the site that could contribute pollutants to the stormwater discharge, and discharge points that would be affected by such spills and leaks are specified.
- Past spills and leaks: A description of significant spills and leaks of oil or toxic or hazardous substances that actually occurred at exposed areas, or that drained to a stormwater conveyance in the three years prior to the date of preparation of the SWPPP are identified.

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Discharge Points
Vehicle Fueling Area	Outside of site
Vehicle Wash Area	See Site Plan
Vehicle and Equipment Storage Area	See Site Plan
Stockpile Areas	See Site Plan
Solid and Green Waste Areas	See Site Plan

Description of Past Spills/Leaks

Date	Description	Discharge Points
	NONE	

2.3 Unauthorized Non-stormwater Discharges Evaluation.

Description of this facility's unauthorized non-stormwater discharge evaluation:

- Date of evaluation:
- Description of the evaluation criteria used:
- List of the discharge points or onsite drainage points that were directly observed during the evaluation:
- Action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a separate NPDES permit was obtained. For example, a floor drain was sealed, a sink drain was re-routed to sanitary or an NPDES permit application was submitted for an unauthorized cooling water discharge:

2.4 Salt Storage.

Description of storage piles containing salt.

2.5 Sampling Data Summary.

N/A

SECTION 3: STORMWATER CONTROL MEASURES (SCM)

3.1 Non-numeric Technology-based Effluent Limits (BPT/BAT/BCT)

3.1.1 Minimize Exposure.

Structural controls and practices used to minimize the exposure of processing and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt and stormwater and the locations of site implementation are described.

3.1.2 Good Housekeeping.

The Discharger shall:

i. Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly;

ii. Minimize or prevent material tracking;

iii. Minimize dust generated from industrial materials or activities;

iv. Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible;

v. Cover all stored industrial materials that can be readily mobilized by contact with storm water;

vi. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water;

vii. Prevent disposal of any rinse/wash waters or industrial materials into he storm water conveyance system;

viii. Minimize storm water discharges from non-industrial areas (e.g., storm water flows from employee parking area) that contact industrial areas of the facility; and,

ix. Minimize authorized NSWDs from non-industrial areas (e.g., potable water, fire hydrant testing, etc.) that contact industrial areas of the facility.

3.1.3 Maintenance.

The Discharger shall:

i. Identify all equipment and systems used outdoors that may spill or leak pollutants;

ii. Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks;

iii. Establish an appropriate schedule for maintenance of identified equipment and systems; and,

iv. Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks.

3.1.4 Spill Prevention and Response Procedures.

Structural controls and procedures used to prevent the potential for leaks, spills, and other releases that may be exposed to stormwater and response to any spills and leaks, including notification procedures are described. Spill prevention and response measures include but are not limited to the following:

- Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
- Use drip pans and absorbents if leaky vehicles and/or equipment are stored outdoors;
- Use spill/overflow protection equipment;
- Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;*
- Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas;
- Develop training on procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;
- Keep spill kits onsite, located near areas where spills may occur or where a rapid response can be made; and
- Notify appropriate facility personnel when a leak, spill or other release occurs.
- Specify cleanup equipment, procedures and spill logs, as appropriate, in the event of spills.

3.1.5 Erosion and Sediment Controls.

i. Implement effective wind erosion controls;

ii. Provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storm event;

iii. Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site;

iv. Divert run-on and storm water generated from within the facility away from all erodible materials; and,

v. If sediment basins are implemented, ensure compliance with the design storm standards in Section X.H.6.

3.1.6 Management of Stormwater.

Controls used at the site to divert, infiltrate, reuse, contain, or otherwise reduce stormwater to minimize pollutants in the discharges and their locations at the site are described.

3.1.7 Salt Storage Piles or Piles Containing Salt.

Structures at the site that either cover or enclose salt storage piles or piles containing salt, and controls that minimize or prevent the discharge of stormwater from such piles are described. Measures and locations at the site where controls and procedures (e.g. good housekeeping, diversions, containment) used to minimize exposure resulting from adding to or removing materials from the pile are described.

3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials.

Controls and procedures used at the site to minimize generation of dust and off-site tracking of materials to minimize pollutants discharged via stormwater are described.

3.2 Numeric Effluent Limitations Based on Effluent Limitations Guidelines (ELGs).

Industrial categories listed below are subject to one of the ELGs identified in the table below (Table 2-1 of the 2021 MSGP), describe controls or procedures that will be implemented at your site to meet these effluent limitations guidelines

Regulated Activity	40 CFR Part/Subpart	Effluent Limit
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I	See Part 8.A.8
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A	See Part 8.C.5
Runoff from asphalt emulsion facilities	Part 443, Subpart A	See Part 8.D.5
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C	See Part 8.E.6
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, or D	See Part 8.J.10
Runoff from hazardous waste landfills	Part 445, Subpart A	See Part 8.K.7
Runoff from non-hazardous waste landfills	Part 445, Subpart B	See Part 8.L.11
Runoff from coal storage piles at steam electric generating facilities	Part 423	See Part 8.O.8
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449	See Part 8.S.9

3.3 Water Quality-based Effluent Limitations and Water Quality Standards.

The measures implemented at the site to control industrial stormwater discharge as necessary to meet applicable water quality standards of all applicable states, tribes, and U.S. territories are described.

Compliance with the conditions in the permit controls discharges as necessary to meet applicable water quality standards. If at any time the owner/operator becomes aware that the stormwater discharge will not be controlled as necessary such that the receiving water of the United States will not meet an applicable water quality standard, the owner/operator must take corrective action(s) as required in the permit and document the corrective actions as required in the permit.

Additional control measures (to meet the narrative water quality-based effluent limit above) on a site-specific basis may be required. Take all measures necessary to be consistent with an available waste load allocation in the approved TMDL.

3.4 Sector-Specific Non-Numeric Effluent Limits.

Controls and procedures used at the site to comply with any sector-specific requirements are described. The locations at your site where each control and/or procedure are implemented are described.

SECTION 4: SCHEDULES AND PROCEDURES

4.1 Good Housekeeping.

A schedule and/or the convention used for determining when pickup and disposal of waste materials occurs (e.g., roll off dumpsters are collected when full) is provided. A schedule for routine inspections for leaks and conditions of drums, tanks, and containers is provided.

4.2 Maintenance.

Preventative maintenance procedures, including regular inspections, testing, maintenance and repair of all stormwater control measures to avoid situations that may result in leaks, spills, and other releases, and any back-up practices in place should a runoff event occur while a control measure is off-line are documented. The schedule or frequency for maintaining all control measures used to comply with the effluent limits are included.

4.3 Spill Prevention and Response Procedures.

Procedures for preventing and responding to spills and leaks, including notification procedures are documented. Stormwater control measures for material handling and storage, and the procedures for preventing spills that can contaminate stormwater are included. Cleanup equipment, procedures and spill logs, as appropriate, in the event of spills are specified. Other plans for Spill Prevention Control and Countermeasure (SPCC) developed for the facility under Section 311 of the Clean Water Act (CWA) and best management practices (BMP) programs otherwise required by an NPDES permit for the facility are referenced. Copies of these plans are kept onsite and available for review.

4.4 Erosion and Sediment Control.

Polymers and/or other chemical treatments are not typically used as part of the erosion and sediment controls.

4.5 Employee Training.

The elements of your training plan include, but not necessarily limited to:

- The content of the training;
- The frequency/schedule of training for employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of the permit; and
- A log of the dates on which specific employees received training.

The following personnel, at a minimum, must receive training, and therefore should be listed out individually in the table below:

- Personnel who are responsible for the design, installation, maintenance, and/or repair of controls (including

pollution prevention measures);

- Personnel responsible for the storage and handling of chemicals and materials that could become pollutants discharged via stormwater;
- Personnel who are responsible for conducting and documenting monitoring and inspections as required; and
- Personnel who are responsible for taking and documenting corrective actions as required.

The personnel who are required to be trained must also be trained to understand the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):

- An overview of what is in the SWPPP;
- Spill response procedures, good housekeeping, maintenance requirements, and material management practices;
- The location of all the controls required by this permit, and how they are to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements;
- When and how to conduct inspections, record applicable findings, and take corrective actions; and
- The facility's emergency procedures.

4.6 Inspections and Assessments.

4.6.1 Routine Facility Inspections.

For routine facility inspections to be performed at your site, your SWPPP must include a description of the following:

1. Person(s) or positions of person(s) responsible for inspection.

   Note: Inspections must be performed by qualified personnel with at least one member of your stormwater pollution prevention team participating. Inspectors must consider the results of visual and analytical monitoring (if any) for the past year when planning and conducting inspections. Qualified personnel are those who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at your facility, and who can also evaluate the effectiveness of control measures.

2. Schedules for conducting inspections, including tentative schedule for facilities in climates with irregular stormwater discharges.

   Note: The qualified personnel must conduct inspections ***at least quarterly*** *(i.e., once each calendar quarter), or in some instances more frequently (e.g., monthly). Increased frequency may be appropriate for some types of equipment, processes and stormwater control measures, or areas of the facility with significant activities and materials exposed to stormwater. At least once each calendar year, the routine inspection must be conducted during a period when a stormwater discharge is occurring.*

3. List areas where industrial materials or activities are exposed to stormwater.
4. List areas identified in the SWPPP and those that are potential pollutant sources.
5. Areas where spills and leaks have occurred in the past three years.

6. Inspection information for discharge points.
7. List the control measures used to comply with the effluent limits contained in the 2021 MSGP.
8. Other site-specific inspection objectives.

4.6.2 Quarterly Visual Assessment of Stormwater Discharges.

For quarterly visual assessments to be performed at your site, your SWPPP must include a description of the following:

1. Person(s) or positions of person(s) responsible for assessments.
2. Schedules for conducting assessments.
3. Specific assessment activities.

Exception to Routine Facility Inspections and Quarterly Visual Assessments for Inactive and Unstaffed Sites.

☐ This site is inactive and unstaffed, and has no industrial materials or activities exposed to stormwater, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii) as signed and certified in Section 7 below.

If you are invoking the exception for inactive and unstaffed sites for your routine facility inspections and/or quarterly visual assessments, include information to support this claim.

Monitoring.

Check the following monitoring activities applicable to your facility:

☐ Indicator monitoring

☐ Benchmark monitoring

☐ Effluent limitations guidelines monitoring

☐ State- or tribal-specific monitoring

☐ Impaired waters monitoring

For each type of monitoring checked above, your SWPPP must include the following information:

1. Sample location(s).
2. Pollutants to be sampled.
3. Monitoring Schedules.
4. Numeric Limitations.
5. Procedures.

Note: it may be helpful to create a table with columns corresponding to # 1 - 5 above for each type of monitoring you are required to conduct.

Exception for Inactive and Unstaffed Facilities (if applicable)

☐ This site is inactive and unstaffed, and has no industrial materials or activities exposed to stormwater, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii) as signed and certified in Section 7 below.

Exception for Substantially Identical Discharge Points(SIDP) (if applicable)

If you plan to use the SIDP exception for your quarterly visual assessment requirements in 2021 MSGP Part 3.2.4 or your indicator, benchmark, or impaired waters monitoring requirements in 2021 MSGP Parts 4.2.1, 4.2.2, and 4.2.5, respectively, include the following information here to substantiate your claim that these discharge points are substantially identical (2021 MSGP Part 6.2.5.3.d):

- Location of each SIDP:
- List the general industrial activities conducted in the drainage area of each discharge point:
- List the control measures implemented in the drainage area of each discharge point:
- List the exposed materials located in the drainage area of each discharge point that are likely to be significant contributors of pollutants via stormwater discharges:
- An estimate of the runoff coefficient of the drainage areas (low = under 40%; medium = 40 to 65%; high = above 65%):
- Why the discharge points are expected to discharge substantially identical effluents:

SECTION 5: DOCUMENTATION TO SUPPORT ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

5.1 Documentation Regarding Endangered Species Act (ESA) Listed Species and Critical Habitat Protection.

5.2 Documentation Regarding National Historic Preservation Act (NHPA)-Protected Properties.

SECTION 6: CORRECTIVE ACTIONS AND ADDITIONAL IMPLEMENTATION MEASURES

This SWPPP is a "living" document and will be modified and updated, as necessary. Actions which can trigger the need for a plan amendment include:

- Facility modifications which may affect runoff quality or quantity
- New operations
- New materials
- New maintenance procedures

All SWPPP modifications, will be kept in the log (Form A) with a description of the modification or amendment, the name of the person making it, and the date.

SECTION 7: SWPPP 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 gathered and evaluated the information contained therein. 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.

Name: Carlos A. Pineda Title: Senior Civil Engineer, P.E.,QSD/QSP

Signature:  Date: 3/14/2022

SECTION 8: SWPPP MODIFICATIONS

N/A

SECTION 9: SWPPP AVAILABILITY

This SWPPP is made available to the public. Public availability for the SWPPP is complied in one of three ways: attaching the SWPPP to the NOI; providing a URL of the SWPPP in the NOI; or providing the following SWPPP information in the NOI:

- Onsite industrial activities exposed to stormwater, including potential spill and leak areas;
- Pollutants or pollutant constituents associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or any authorized non-stormwater discharges;
- Stormwater control measures you employ to comply with the non-numeric technology-based effluent limits and any other measures taken to comply with the water quality-based effluent limits; and

Schedule for good housekeeping and maintenance and schedule for all inspections.

SWPPP APPENDICES

Attachment A – General Location Map
Attachment B – Notice of Intent
Attachment C – Site Map

- ***Site Map***
- ***Site Photos***
- ***Vegetated Swales Specifications (TC30)***
- ***Hydraulic Calculations***

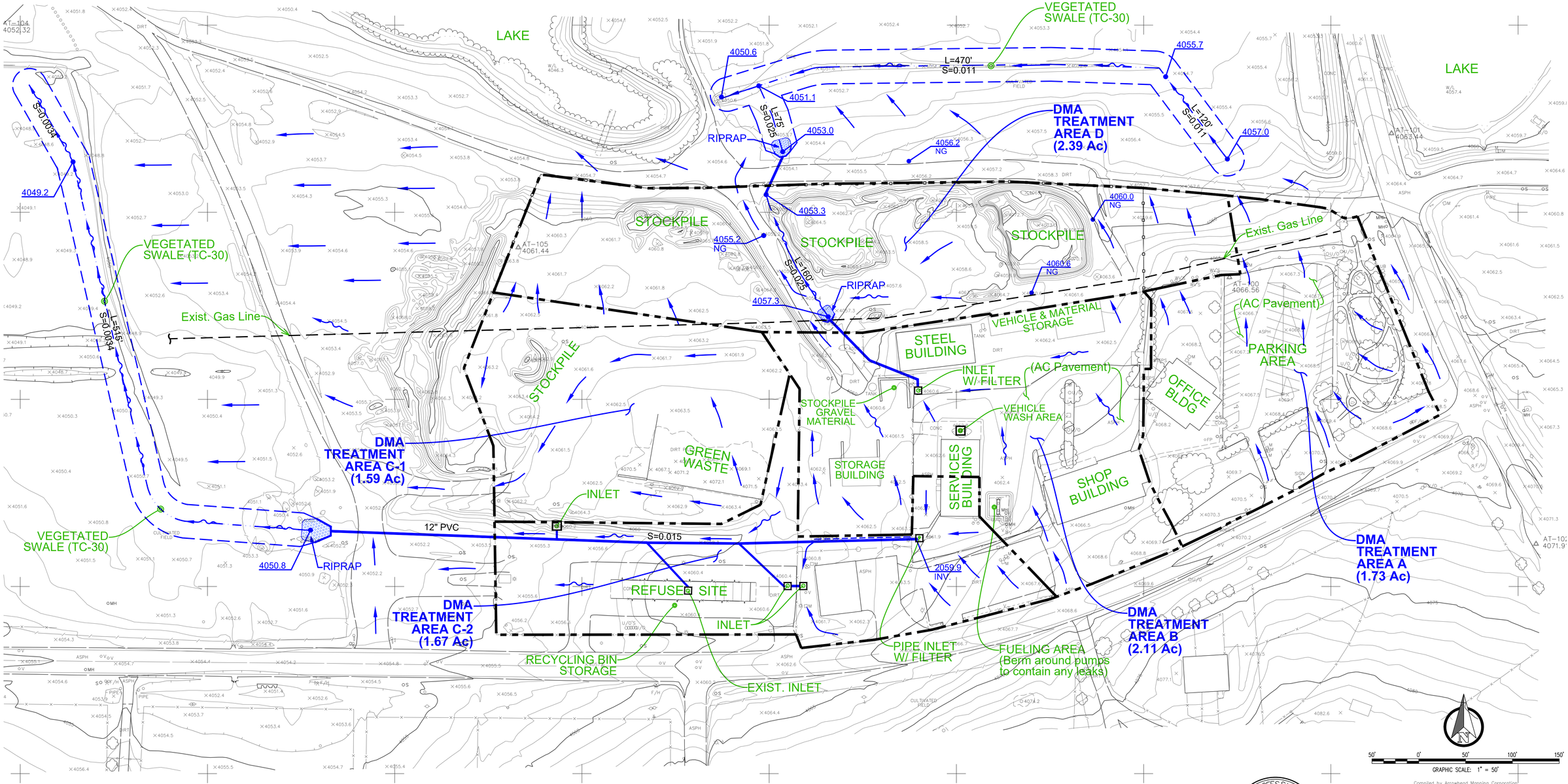
Attachment D – SWPPP Forms
Form A - Amendment Log
Form B – Non-Stormwater Discharge Evaluation
Form C – Significant spills, leaks or other releases
Form D – Maintenance
Form E – Training Outline and Log Sheet
Form F – Monthly Inspection
Form G – Sample Visual Monitoring
Form H – Annual Evaluation
Attachment E – Monitoring and Sampling Guide
Attachment F – Industrial General Permit

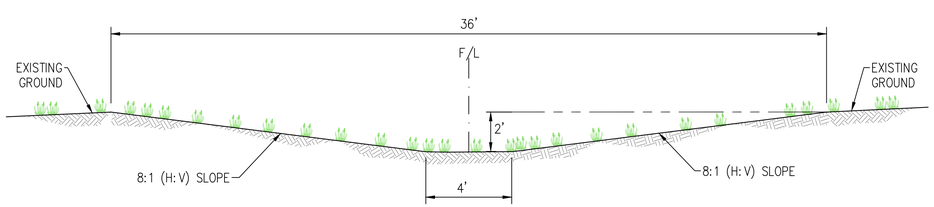
Attachment A – Location Map

Attachment B – Notice of Intent

WILL BE ADDED

Attachment C – Site Plan





VEGETATED SWALE SECTION
NOT TO SCALE

WATER QUALITY PEAK Q'S - VEGETATED SWALES

C	I – Fm	DA	Qp	BMP TYPE	BMP SIZE
0.9	0.2	1.73	0.3114	Vegetated Swale	Base=2ft., 4:1, L=590
0.9	0.2	2.11	0.3798	Vegetated Swale	Base=2ft., 4:1, L=250
0.9	0.2	1.67	0.3006	Vegetated Swale	Base=2ft., 4:1, L=440
0.9	0.2	1.59	0.2862	Vegetated Swale	Base=2ft., 4:1, L=440
0.4	0.2	2.39	0.1912	N/A	N/A

Qp = 0.9 * (I – Fm) * DA, ft2 / 43,560 ft2/acre ; Fm = ap * Fp

I	0.6	2 year, 1hr. NOAA - Atlas 14
Fm	0.4	

Carlos A. Pineda
CARLOS A. PINEDA
RCE No. C38639

REGISTERED PROFESSIONAL ENGINEER
CARLOS A. PINEDA
NO. C38639
EXPIRES 3-31-23
CIVIL
STATE OF CALIFORNIA

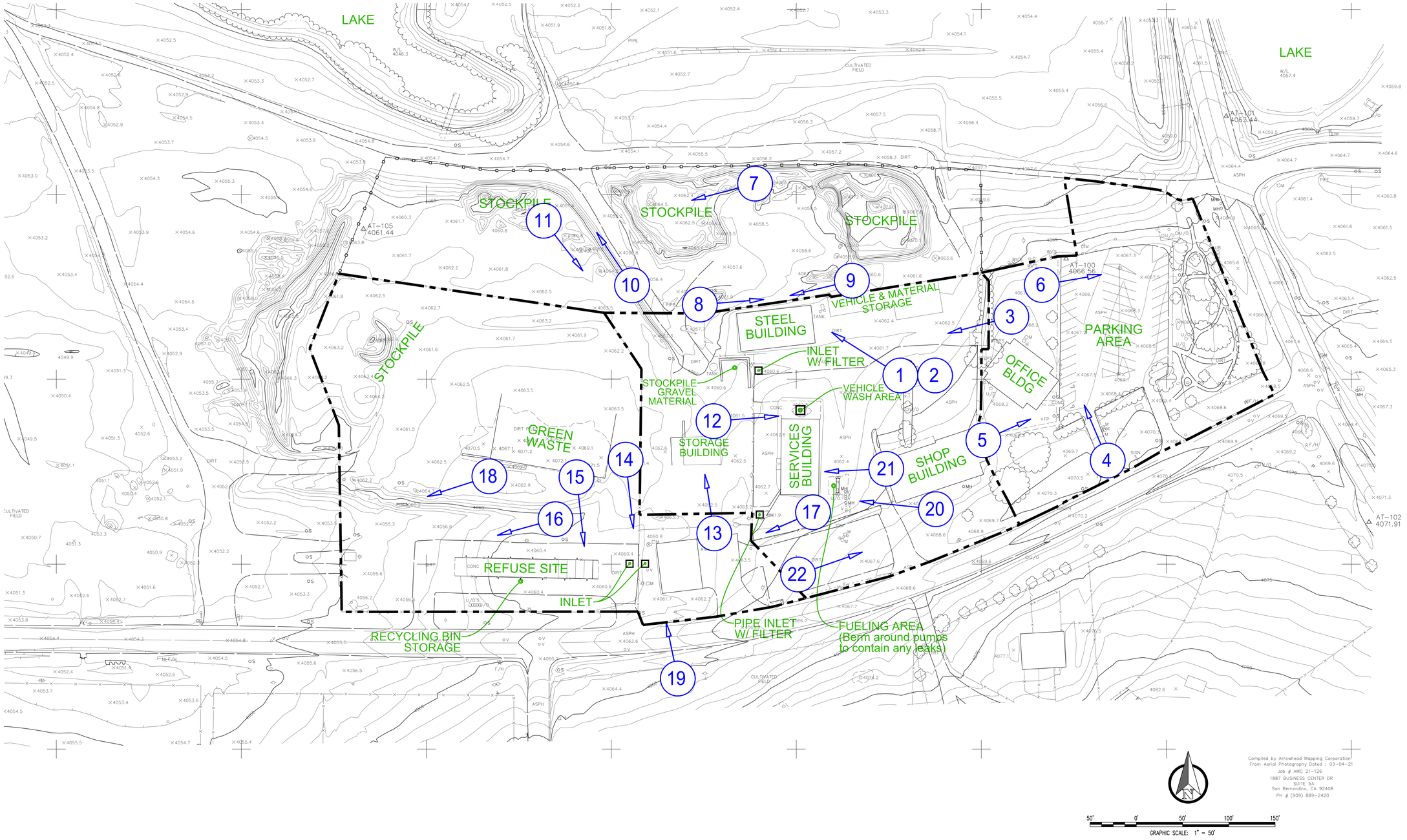
SITE PLAN
STORMWATER POLLUTION PREVENTION PLAN

BEAR VALLEY COMMUNITY SERVICES DISTRICT

PREPARED BY:
TRANSTECH

JN 210139 : 3-11-2021

Attachment C – Site Photos



Compiled by Arrowhead Mapping Corporation
From Aerial Photography Dated : 03-04-21
Job # AMC 21-126
1887 BUSINESS CENTER DR
SUITE 5A
San Bernardino, CA 92408
PH # (909) 889-2420

50' 0' 50' 100' 150'
GRAPHIC SCALE: 1" = 50'

SITE PHOTOS KEY MAP

BEAR VALLEY COMMUNITY SERVICES DISTRICT

PREPARED BY:
TRANSTECH
JN 210139 : 11-02-2021

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5

PHOTO 6

PHOTO 8

PHOTO 9


PHOTO 10


PHOTO 11


PHOTO 12


PHOTO 13


PHOTO 14


PHOTO 15


PHOTO 16

PHOTO 17


PHOTO 18

PHOTO 18

PHOTO 20

PHOTO 21

PHOTO 22

Attachment C – Vegetated Swale Specifications

Vegetated Swale TC-30

Design Considerations

- Tributary Area
- Area Required
- Slope
- Water Availability

Description

Vegetated swales are open, shallow channels with vegetation covering the side slopes and bottom that collect and slowly convey runoff flow to downstream discharge points. They are designed to treat runoff through filtering by the vegetation in the channel, filtering through a subsoil matrix, and/or infiltration into the underlying soils. Swales can be natural or manmade. They trap particulate pollutants (suspended solids and trace metals), promote infiltration, and reduce the flow velocity of stormwater runoff. Vegetated swales can serve as part of a stormwater drainage system and can replace curbs, gutters and storm sewer systems.

Targeted Constituents

☑	Sediment	▲
☑	Nutrients	●
☑	Trash	●
☑	Metals	▲
☑	Bacteria	●
☑	Oil and Grease	▲
☑	Organics	▲

Legend ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

California Experience

Caltrans constructed and monitored six vegetated swales in southern California. These swales were generally effective in reducing the volume and mass of pollutants in runoff. Even in the areas where the annual rainfall was only about 10 inches/yr, the vegetation did not require additional irrigation. One factor that strongly affected performance was the presence of large numbers of gophers at most of the sites. The gophers created earthen mounds, destroyed vegetation, and generally reduced the effectiveness of the controls for TSS reduction.

Advantages

- If properly designed, vegetated, and operated, swales can serve as an aesthetic, potentially inexpensive urban development or roadway drainage conveyance measure with significant collateral water quality benefits.

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- Roadside ditches should be regarded as significant potential swale/buffer strip sites and should be utilized for this purpose whenever possible.

Limitations

- Can be difficult to avoid channelization.
- May not be appropriate for industrial sites or locations where spills may occur
- Grassed swales cannot treat a very large drainage area. Large areas may be divided and treated using multiple swales.
- A thick vegetative cover is needed for these practices to function properly.
- They are impractical in areas with steep topography.
- They are not effective and may even erode when flow velocities are high, if the grass cover is not properly maintained.
- In some places, their use is restricted by law: many local municipalities require curb and gutter systems in residential areas.
- Swales are mores susceptible to failure if not properly maintained than other treatment BMPs.

Design and Sizing Guidelines

- Flow rate based design determined by local requirements or sized so that 85% of the annual runoff volume is discharged at less than the design rainfall intensity.
- Swale should be designed so that the water level does not exceed 2/3rds the height of the grass or 4 inches, which ever is less, at the design treatment rate.
- Longitudinal slopes should not exceed 2.5%
- Trapezoidal channels are normally recommended but other configurations, such as parabolic, can also provide substantial water quality improvement and may be easier to mow than designs with sharp breaks in slope.
- Swales constructed in cut are preferred, or in fill areas that are far enough from an adjacent slope to minimize the potential for gopher damage. Do not use side slopes constructed of fill, which are prone to structural damage by gophers and other burrowing animals.
- A diverse selection of low growing, plants that thrive under the specific site, climatic, and watering conditions should be specified. Vegetation whose growing season corresponds to the wet season are preferred. Drought tolerant vegetation should be considered especially for swales that are not part of a regularly irrigated landscaped area.
- The width of the swale should be determined using Manning's Equation using a value of 0.25 for Manning's n.

Construction/Inspection Considerations

- Include directions in the specifications for use of appropriate fertilizer and soil amendments based on soil properties determined through testing and compared to the needs of the vegetation requirements.
- Install swales at the time of the year when there is a reasonable chance of successful establishment without irrigation; however, it is recognized that rainfall in a given year may not be sufficient and temporary irrigation may be used.
- If sod tiles must be used, they should be placed so that there are no gaps between the tiles; stagger the ends of the tiles to prevent the formation of channels along the swale or strip.
- Use a roller on the sod to ensure that no air pockets form between the sod and the soil.
- Where seeds are used, erosion controls will be necessary to protect seeds for at least 75 days after the first rainfall of the season.

Performance

The literature suggests that vegetated swales represent a practical and potentially effective technique for controlling urban runoff quality. While limited quantitative performance data exists for vegetated swales, it is known that check dams, slight slopes, permeable soils, dense grass cover, increased contact time, and small storm events all contribute to successful pollutant removal by the swale system. Factors decreasing the effectiveness of swales include compacted soils, short runoff contact time, large storm events, frozen ground, short grass heights, steep slopes, and high runoff velocities and discharge rates.

Conventional vegetated swale designs have achieved mixed results in removing particulate pollutants. A study performed by the Nationwide Urban Runoff Program (NURP) monitored three grass swales in the Washington, D.C., area and found no significant improvement in urban runoff quality for the pollutants analyzed. However, the weak performance of these swales was attributed to the high flow velocities in the swales, soil compaction, steep slopes, and short grass height.

Another project in Durham, NC, monitored the performance of a carefully designed artificial swale that received runoff from a commercial parking lot. The project tracked 11 storms and concluded that particulate concentrations of heavy metals (Cu, Pb, Zn, and Cd) were reduced by approximately 50 percent. However, the swale proved largely ineffective for removing soluble nutrients.

The effectiveness of vegetated swales can be enhanced by adding check dams at approximately 17 meter (50 foot) increments along their length (See Figure 1). These dams maximize the retention time within the swale, decrease flow velocities, and promote particulate settling. Finally, the incorporation of vegetated filter strips parallel to the top of the channel banks can help to treat sheet flows entering the swale.

Only 9 studies have been conducted on all grassed channels designed for water quality (Table 1). The data suggest relatively high removal rates for some pollutants, but negative removals for some bacteria, and fair performance for phosphorus.

Table 1 Grassed swale pollutant removal efficiency data							
	Removal Efficiencies (% Removal)						
Study	TSS	TP	TN	NO_3	Metals	Bacteria	Type
Caltrans 2002	77	8	67	66	83-90	-33	dry swales
Goldberg 1993	67.8	4.5	-	31.4	42–62	-100	grassed channel
Seattle Metro and Washington Department of Ecology 1992	60	45	-	-25	2–16	-25	grassed channel
Seattle Metro and Washington Department of Ecology, 1992	83	29	-	-25	46–73	-25	grassed channel
Wang et al., 1981	80	-	-	-	70–80	-	dry swale
Dorman et al., 1989	98	18	-	45	37–81	-	dry swale
Harper, 1988	87	83	84	80	88–90	-	dry swale
Kercher et al., 1983	99	99	99	99	99	-	dry swale
Harper, 1988.	81	17	40	52	37–69	-	wet swale
Koon, 1995	67	39	-	9	-35 to 6	-	wet swale

While it is difficult to distinguish between different designs based on the small amount of available data, grassed channels generally have poorer removal rates than wet and dry swales, although some swales appear to export soluble phosphorus (Harper, 1988; Koon, 1995). It is not clear why swales export bacteria. One explanation is that bacteria thrive in the warm swale soils.

Siting Criteria

The suitability of a swale at a site will depend on land use, size of the area serviced, soil type, slope, imperviousness of the contributing watershed, and dimensions and slope of the swale system (Schueler et al., 1992). In general, swales can be used to serve areas of less than 10 acres, with slopes no greater than 5 %. Use of natural topographic lows is encouraged and natural drainage courses should be regarded as significant local resources to be kept in use (Young et al., 1996).

Selection Criteria (NCTCOG, 1993)

- Comparable performance to wet basins
- Limited to treating a few acres
- Availability of water during dry periods to maintain vegetation
- Sufficient available land area

Research in the Austin area indicates that vegetated controls are effective at removing pollutants even when dormant. Therefore, irrigation is not required to maintain growth during dry periods, but may be necessary only to prevent the vegetation from dying.

The topography of the site should permit the design of a channel with appropriate slope and cross-sectional area. Site topography may also dictate a need for additional structural controls. Recommendations for longitudinal slopes range between 2 and 6 percent. Flatter slopes can be used, if sufficient to provide adequate conveyance. Steep slopes increase flow velocity, decrease detention time, and may require energy dissipating and grade check. Steep slopes also can be managed using a series of check dams to terrace the swale and reduce the slope to within acceptable limits. The use of check dams with swales also promotes infiltration.

Additional Design Guidelines

Most of the design guidelines adopted for swale design specify a minimum hydraulic residence time of 9 minutes. This criterion is based on the results of a single study conducted in Seattle, Washington (Seattle Metro and Washington Department of Ecology, 1992), and is not well supported. Analysis of the data collected in that study indicates that pollutant removal at a residence time of 5 minutes was not significantly different, although there is more variability in that data. Therefore, additional research in the design criteria for swales is needed. Substantial pollutant removal has also been observed for vegetated controls designed solely for conveyance (Barrett et al, 1998); consequently, some flexibility in the design is warranted.

Many design guidelines recommend that grass be frequently mowed to maintain dense coverage near the ground surface. Recent research (Colwell et al., 2000) has shown mowing frequency or grass height has little or no effect on pollutant removal.

Summary of Design Recommendations

1) The swale should have a length that provides a minimum hydraulic residence time of at least 10 minutes. The maximum bottom width should not exceed 10 feet unless a dividing berm is provided. The depth of flow should not exceed 2/3rds the height of the grass at the peak of the water quality design storm intensity. The channel slope should not exceed 2.5%.

2) A design grass height of 6 inches is recommended.

3) Regardless of the recommended detention time, the swale should be not less than 100 feet in length.

4) The width of the swale should be determined using Manning's Equation, at the peak of the design storm, using a Manning's n of 0.25.

5) The swale can be sized as both a treatment facility for the design storm and as a conveyance system to pass the peak hydraulic flows of the 100-year storm if it is located "on-line." The side slopes should be no steeper than 3:1 (H:V).

6) Roadside ditches should be regarded as significant potential swale/buffer strip sites and should be utilized for this purpose whenever possible. If flow is to be introduced through curb cuts, place pavement slightly above the elevation of the vegetated areas. Curb cuts should be at least 12 inches wide to prevent clogging.

7) Swales must be vegetated in order to provide adequate treatment of runoff. It is important to maximize water contact with vegetation and the soil surface. For general purposes, select fine, close-growing, water-resistant grasses. If possible, divert runoff (other than necessary irrigation) during the period of vegetation

establishment. Where runoff diversion is not possible, cover graded and seeded areas with suitable erosion control materials.

Maintenance

The useful life of a vegetated swale system is directly proportional to its maintenance frequency. If properly designed and regularly maintained, vegetated swales can last indefinitely. The maintenance objectives for vegetated swale systems include keeping up the hydraulic and removal efficiency of the channel and maintaining a dense, healthy grass cover.

Maintenance activities should include periodic mowing (with grass never cut shorter than the design flow depth), weed control, watering during drought conditions, reseeding of bare areas, and clearing of debris and blockages. Cuttings should be removed from the channel and disposed in a local composting facility. Accumulated sediment should also be removed manually to avoid concentrated flows in the swale. The application of fertilizers and pesticides should be minimal.

Another aspect of a good maintenance plan is repairing damaged areas within a channel. For example, if the channel develops ruts or holes, it should be repaired utilizing a suitable soil that is properly tamped and seeded. The grass cover should be thick; if it is not, reseed as necessary. Any standing water removed during the maintenance operation must be disposed to a sanitary sewer at an approved discharge location. Residuals (e.g., silt, grass cuttings) must be disposed in accordance with local or State requirements. Maintenance of grassed swales mostly involves maintenance of the grass or wetland plant cover. Typical maintenance activities are summarized below:

- Inspect swales at least twice annually for erosion, damage to vegetation, and sediment and debris accumulation preferably at the end of the wet season to schedule summer maintenance and before major fall runoff to be sure the swale is ready for winter. However, additional inspection after periods of heavy runoff is desirable. The swale should be checked for debris and litter, and areas of sediment accumulation.

- Grass height and mowing frequency may not have a large impact on pollutant removal. Consequently, mowing may only be necessary once or twice a year for safety or aesthetics or to suppress weeds and woody vegetation.

- Trash tends to accumulate in swale areas, particularly along highways. The need for litter removal is determined through periodic inspection, but litter should always be removed prior to mowing.

- Sediment accumulating near culverts and in channels should be removed when it builds up to 75 mm (3 in.) at any spot, or covers vegetation.

- Regularly inspect swales for pools of standing water. Swales can become a nuisance due to mosquito breeding in standing water if obstructions develop (e.g. debris accumulation, invasive vegetation) and/or if proper drainage slopes are not implemented and maintained.

Cost

Construction Cost

Little data is available to estimate the difference in cost between various swale designs. One study (SWRPC, 1991) estimated the construction cost of grassed channels at approximately $0.25 per ft². This price does not include design costs or contingencies. Brown and Schueler (1997) estimate these costs at approximately 32 percent of construction costs for most stormwater management practices. For swales, however, these costs would probably be significantly higher since the construction costs are so low compared with other practices. A more realistic estimate would be a total cost of approximately $0.50 per ft², which compares favorably with other stormwater management practices.

Table 2 Swale Cost Estimate (SEWRPC, 1991)

Component	Unit	Extent	Unit Cost			Total Cost		
			Low	Moderate	High	Low	Moderate	High
Mobilization / Demobilization-Light	Swale	1	$107	$274	$441	$107	$274	$441
Site Preparation								
Clearing[b]	Acre	0.5	$2,200	$3,800	$5,400	$1,100	$1,900	$2,700
Grubbing[c]	Acre	0.25	$3,800	$5,200	$6,600	$950	$1,300	$1,650
General Excavation[d]	Yd^3	372	$2.10	$3.70	$5.30	$781	$1,376	$1,972
Level and Till[e]	Yd^2	1,210	$0.20	$0.35	$0.50	$242	$424	$605
Sites Development								
Salvaged Topsoil Seed, and Mulch[f]	Yd^2	1,210	$0.40	$1.00	$1.60	$484	$1,210	$1,936
Sod[g]	Yd^2	1,210	$1.20	$2.40	$3.60	$1,452	$2,904	$4,356
Subtotal	--	--	--	--	--	$5,116	$9,388	$13,660
Contingencies	Swale	1	25%	25%	25%	$1,279	$2,347	$3,415
Total	--	--	--	--	--	$6,395	$11,735	$17,075

Source: (SEWRPC, 1991)

Note: Mobilization/demobilization refers to the organization and planning involved in establishing a vegetative swale.

[a] Swale has a bottom width of 1.0 foot, a top width of 10 feet with 1:3 side slopes, and a 1,000-foot length.

[b] Area cleared = (top width + 10 feet) x swale length.

[c] Area grubbed = (top width x swale length).

[d] Volume excavated = (0.67 x top width x swale depth) x swale length (parabolic cross-section).

[e] Area tilled = $\left(\text{top width} + \frac{8(\text{swale depth}^2)}{3(\text{top width})}\right) \times$ swale length (parabolic cross-section).

[f] Area seeded = area cleared x 0.5.

[g] Area sodded = area cleared x 0.5.

Table 3 Estimated Maintenance Costs (SEWRPC, 1991)

Component	Unit Cost	Swale Size (Depth and Top Width)		Comment
		1.5 Foot Depth, One-Foot Bottom Width, 10-Foot Top Width	3-Foot Depth, 3-Foot Bottom Width, 21-Foot Top Width	
Lawn Mowing	\$0.85 / 1,000 ft^2 / mowing	\$0.14 / linear foot	\$0.21 / linear foot	Lawn maintenance area=(top width + 10 feet) x length. Mow eight times per year
General Lawn Care	\$9.00 / 1,000 ft^2 / year	\$0.18 / linear foot	\$0.28 / linear foot	Lawn maintenance area = (top width + 10 feet) x length
Swale Debris and Litter Removal	\$0.10 / linear foot / year	\$0.10 / linear foot	\$0.10 / linear foot	–
Grass Reseeding with Mulch and Fertilizer	\$0.30 / yd^2	\$0.01 / linear foot	\$0.01 / linear foot	Area revegetated equals 1% of lawn maintenance area per year
Program Administration and Swale Inspection	\$0.15 / linear foot / year, plus \$25 / inspection	\$0.15 / linear foot	\$0.15 / linear foot	Inspect four times per year
Total	–	**\$0.58 / linear foot**	**\$ 0.75 / linear foot**	–

Maintenance Cost

Caltrans (2002) estimated the expected annual maintenance cost for a swale with a tributary area of approximately 2 ha at approximately $2,700. Since almost all maintenance consists of mowing, the cost is fundamentally a function of the mowing frequency. Unit costs developed by SEWRPC are shown in Table 3. In many cases vegetated channels would be used to convey runoff and would require periodic mowing as well, so there may be little additional cost for the water quality component. Since essentially all the activities are related to vegetation management, no special training is required for maintenance personnel.

References and Sources of Additional Information

Barrett, Michael E., Walsh, Patrick M., Malina, Joseph F., Jr., Charbeneau, Randall J, 1998, "Performance of vegetative controls for treating highway runoff," *ASCE Journal of Environmental Engineering*, Vol. 124, No. 11, pp. 1121-1128.

Brown, W., and T. Schueler. 1997. *The Economics of Stormwater BMPs in the Mid-Atlantic Region*. Prepared for the Chesapeake Research Consortium, Edgewater, MD, by the Center for Watershed Protection, Ellicott City, MD.

Center for Watershed Protection (CWP). 1996. *Design of Stormwater Filtering Systems*. Prepared for the Chesapeake Research Consortium, Solomons, MD, and USEPA Region V, Chicago, IL, by the Center for Watershed Protection, Ellicott City, MD.

Colwell, Shanti R., Horner, Richard R., and Booth, Derek B., 2000. *Characterization of Performance Predictors and Evaluation of Mowing Practices in Biofiltration Swales*. Report to King County Land And Water Resources Division and others by Center for Urban Water Resources Management, Department of Civil and Environmental Engineering, University of Washington, Seattle, WA

Dorman, M.E., J. Hartigan, R.F. Steg, and T. Quasebarth. 1989. *Retention, Detention and Overland Flow for Pollutant Removal From Highway Stormwater Runoff. Vol. 1*. FHWA/RD 89/202. Federal Highway Administration, Washington, DC.

Goldberg. 1993. *Dayton Avenue Swale Biofiltration Study*. Seattle Engineering Department, Seattle, WA.

Harper, H. 1988. *Effects of Stormwater Management Systems on Groundwater Quality*. Prepared for Florida Department of Environmental Regulation, Tallahassee, FL, by Environmental Research and Design, Inc., Orlando, FL.

Kercher, W.C., J.C. Landon, and R. Massarelli. 1983. Grassy swales prove cost-effective for water pollution control. *Public Works*, 16: 53–55.

Koon, J. 1995. *Evaluation of Water Quality Ponds and Swales in the Issaquah/East Lake Sammamish Basins*. King County Surface Water Management, Seattle, WA, and Washington Department of Ecology, Olympia, WA.

Metzger, M. E., D. F. Messer, C. L. Beitia, C. M. Myers, and V. L. Kramer. 2002. The Dark Side Of Stormwater Runoff Management: Disease Vectors Associated With Structural BMPs. Stormwater 3(2): 24-39.Oakland, P.H. 1983. An evaluation of stormwater pollutant removal

through grassed swale treatment. In *Proceedings of the International Symposium of Urban Hydrology, Hydraulics and Sediment Control, Lexington, KY*. pp. 173–182.

Occoquan Watershed Monitoring Laboratory. 1983. Final Report: *Metropolitan Washington Urban Runoff Project*. Prepared for the Metropolitan Washington Council of Governments, Washington, DC, by the Occoquan Watershed Monitoring Laboratory, Manassas, VA.

Pitt, R., and J. McLean. 1986. *Toronto Area Watershed Management Strategy Study: Humber River Pilot Watershed Project*. Ontario Ministry of Environment, Toronto, ON.

Schueler, T. 1997. Comparative Pollutant Removal Capability of Urban BMPs: A reanalysis. *Watershed Protection Techniques* 2(2):379–383.

Seattle Metro and Washington Department of Ecology. 1992. *Biofiltration Swale Performance: Recommendations and Design Considerations*. Publication No. 657. Water Pollution Control Department, Seattle, WA.

Southeastern Wisconsin Regional Planning Commission (SWRPC). 1991. *Costs of Urban Nonpoint Source Water Pollution Control Measures*. Technical report no. 31. Southeastern Wisconsin Regional Planning Commission, Waukesha, WI.

U.S. EPA, 1999, Stormwater Fact Sheet: Vegetated Swales, Report # 832-F-99-006 http://www.epa.gov/owm/mtb/vegswale.pdf, Office of Water, Washington DC.

Wang, T., D. Spyridakis, B. Mar, and R. Horner. 1981. *Transport, Deposition and Control of Heavy Metals in Highway Runoff*. FHWA-WA-RD-39-10. University of Washington, Department of Civil Engineering, Seattle, WA.

Washington State Department of Transportation, 1995, *Highway Runoff Manual*, Washington State Department of Transportation, Olympia, Washington.

Welborn, C., and J. Veenhuis. 1987. *Effects of Runoff Controls on the Quantity and Quality of Urban Runoff in Two Locations in Austin, TX*. USGS Water Resources Investigations Report No. 87-4004. U.S. Geological Survey, Reston, VA.

Yousef, Y., M. Wanielista, H. Harper, D. Pearce, and R. Tolbert. 1985. *Best Management Practices: Removal of Highway Contaminants By Roadside Swales*. University of Central Florida and Florida Department of Transportation, Orlando, FL.

Yu, S., S. Barnes, and V. Gerde. 1993. *Testing of Best Management Practices for Controlling Highway Runoff*. FHWA/VA-93-R16. Virginia Transportation Research Council, Charlottesville, VA.

Information Resources

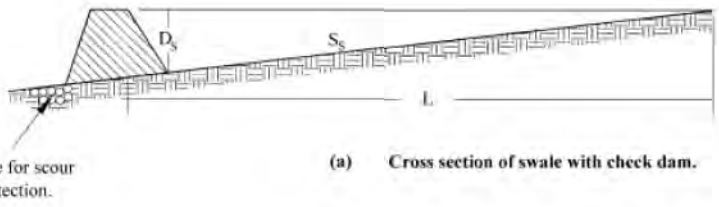
Maryland Department of the Environment (MDE). 2000. *Maryland Stormwater Design Manual*. www.mde.state.md.us/environment/wma/stormwatermanual. Accessed May 22, 2001.

Reeves, E. 1994. Performance and Condition of Biofilters in the Pacific Northwest. *Watershed Protection Techniques* 1(3):117–119.

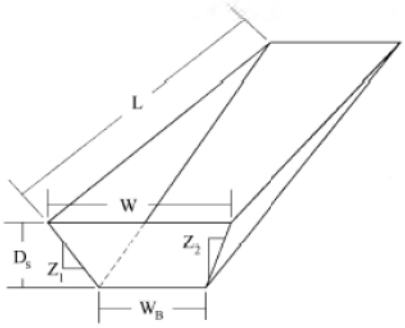
Seattle Metro and Washington Department of Ecology. 1992. *Biofiltration Swale Performance.* Recommendations and Design Considerations. Publication No. 657. Seattle Metro and Washington Department of Ecology, Olympia, WA.

USEPA 1993. *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. EPA-840-B-92-002. U.S. Environmental Protection Agency, Office of Water. Washington, DC.

Watershed Management Institute (WMI). 1997. *Operation, Maintenance, and Management of Stormwater Management Systems*. Prepared for U.S. Environmental Protection Agency, Office of Water. Washington, DC, by the Watershed Management Institute, Ingleside, MD.



(a) Cross section of swale with check dam.



(b) Dimensional view of swale impoundment area.

Notation:

L = Length of swale impoundment area per check dam (ft)
D_S = Depth of check dam (ft)
S_S = Bottom slpe of swale (ft/ft)
W = Top width of check dam (ft)
W_B = Bottom width of check dam (ft)
$Z_{1\&2}$ = Ratio of horizontal to vertical change in swale side slope (ft/ft)

Attachment C – Hydraulic Calculations

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   TIME/DATE OF STUDY: 12:10 03/11/2022

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  Problem Descriptions:
   HYDRAULIC CALCULATION FOR VEGETATED SWALE
   VEGETATEDSWALE - DMA -A


*****************************************************************
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 >>>>CHANNEL INPUT INFORMATION<<<<
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     CHANNEL Z1(HORIZONTAL/VERTICAL) =    8.00
             Z2(HORIZONTAL/VERTICAL) =    1.00
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     CONSTANT CHANNEL SLOPE(FEET/FEET) = 0.011000
     UNIFORM FLOW(CFS) =        0.31
     MANNINGS FRICTION FACTOR = 0.2500

=================================================================
===========
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 ----------------------------------------------------------------
------------
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     FLOW TOP-WIDTH(FEET) =         6.42
     FLOW AREA(SQUARE FEET) =           1.40
     HYDRAULIC DEPTH(FEET) =     0.22
     FLOW AVERAGE VELOCITY(FEET/SEC.) =     0.22
```

```
     UNIFORM FROUDE NUMBER =    0.083
     PRESSURE + MOMENTUM(POUNDS) =           10.98
     AVERAGED VELOCITY HEAD(FEET) =      0.001
     SPECIFIC ENERGY(FEET) =      0.270

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     CRITICAL-DEPTH FLOW INFORMATION:
 ---------------------------------------------------------------
------------
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     CRITICAL FLOW AREA(SQUARE FEET) =           0.24
     CRITICAL FLOW HYDRAULIC DEPTH(FEET) =     0.05
     CRITICAL FLOW AVERAGE VELOCITY(FEET/SEC.) =     1.30
     CRITICAL DEPTH(FEET) =     0.06
     CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) =            1.19
     AVERAGED CRITICAL FLOW VELOCITY HEAD(FEET) =      0.026
     CRITICAL FLOW SPECIFIC ENERGY(FEET) =      0.082

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1542

                            Analysis prepared by:




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   TIME/DATE OF STUDY: 12:20 03/11/2022

===========================================================================
  Problem Descriptions:
   VEGETATED SWALE FOR DMA-B


***************************************************************************
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             Z2(HORIZONTAL/VERTICAL) =    1.00
     BASEWIDTH(FEET) =     4.00
     CONSTANT CHANNEL SLOPE(FEET/FEET) = 0.025000
     UNIFORM FLOW(CFS) =        0.38
     MANNINGS FRICTION FACTOR = 0.2500

===========================================================================
     NORMAL-DEPTH FLOW INFORMATION:
 ----------------------------------------------------------------------------
     >>>>> NORMAL DEPTH(FEET) =   0.24
     FLOW TOP-WIDTH(FEET) =         6.15
     FLOW AREA(SQUARE FEET) =           1.21
     HYDRAULIC DEPTH(FEET) =     0.20
     FLOW AVERAGE VELOCITY(FEET/SEC.) =     0.31
```

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     UNIFORM FROUDE NUMBER =    0.125
     PRESSURE + MOMENTUM(POUNDS) =            8.59
     AVERAGED VELOCITY HEAD(FEET) =      0.002
     SPECIFIC ENERGY(FEET) =      0.240

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===========
     CRITICAL-DEPTH FLOW INFORMATION:
 ---------------------------------------------------------------
------------
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     CRITICAL FLOW AREA(SQUARE FEET) =           0.27
     CRITICAL FLOW HYDRAULIC DEPTH(FEET) =     0.06
     CRITICAL FLOW AVERAGE VELOCITY(FEET/SEC.) =     1.40
     CRITICAL DEPTH(FEET) =     0.06
     CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) =            1.56
     AVERAGED CRITICAL FLOW VELOCITY HEAD(FEET) =      0.031
     CRITICAL FLOW SPECIFIC ENERGY(FEET) =      0.094

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  Problem Descriptions:
   VEGETATED SWALE FOR DMA-B AND DMA-D



***************************************************************
**********
 >>>>CHANNEL INPUT INFORMATION<<<<
 ---------------------------------------------------------------
------------
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             Z2(HORIZONTAL/VERTICAL) =    1.00
     BASEWIDTH(FEET) =     4.00
     CONSTANT CHANNEL SLOPE(FEET/FEET) = 0.025000
     UNIFORM FLOW(CFS) =        0.58
     MANNINGS FRICTION FACTOR = 0.2500

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===========
     NORMAL-DEPTH FLOW INFORMATION:
 ---------------------------------------------------------------
------------
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     FLOW AREA(SQUARE FEET) =           1.63
     HYDRAULIC DEPTH(FEET) =     0.24
     FLOW AVERAGE VELOCITY(FEET/SEC.) =     0.36
     UNIFORM FROUDE NUMBER =    0.128
     PRESSURE + MOMENTUM(POUNDS) =           14.49
     AVERAGED VELOCITY HEAD(FEET) =      0.002
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     SPECIFIC ENERGY(FEET) =      0.305

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     CRITICAL-DEPTH FLOW INFORMATION:
 ----------------------------------------------------------------
------------
     CRITICAL FLOW TOP-WIDTH(FEET) =         4.76
     CRITICAL FLOW AREA(SQUARE FEET) =           0.37
     CRITICAL FLOW HYDRAULIC DEPTH(FEET) =     0.08
     CRITICAL FLOW AVERAGE VELOCITY(FEET/SEC.) =     1.56
     CRITICAL DEPTH(FEET) =     0.08
     CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) =            2.71
     AVERAGED CRITICAL FLOW VELOCITY HEAD(FEET) =      0.038
     CRITICAL FLOW SPECIFIC ENERGY(FEET) =      0.123

================================================================
===========
```

```
****************************************************************************
            HYDRAULIC ELEMENTS - I  PROGRAM PACKAGE
      (C) Copyright 1982-2016 Advanced Engineering Software (aes)
          Ver. 23.0  Release Date: 07/01/2016  License ID 1542

                    Analysis prepared by:





 ----------------------------------------------------------------------------
   TIME/DATE OF STUDY: 12:33 03/11/2022

============================================================================
  Problem Descriptions:
   VEGETATED SWALE FOR DMA C-2



****************************************************************************
 >>>>CHANNEL INPUT INFORMATION<<<<
 ----------------------------------------------------------------------------
     CHANNEL Z1(HORIZONTAL/VERTICAL) =    8.00
             Z2(HORIZONTAL/VERTICAL) =    1.00
     BASEWIDTH(FEET) =     4.00
     CONSTANT CHANNEL SLOPE(FEET/FEET) = 0.003400
     UNIFORM FLOW(CFS) =        0.16
     MANNINGS FRICTION FACTOR = 0.2500

============================================================================
     NORMAL-DEPTH FLOW INFORMATION:
 ----------------------------------------------------------------------------
     >>>>> NORMAL DEPTH(FEET) =   0.26
     FLOW TOP-WIDTH(FEET) =         6.32
     FLOW AREA(SQUARE FEET) =           1.33
     HYDRAULIC DEPTH(FEET) =     0.21
     FLOW AVERAGE VELOCITY(FEET/SEC.) =     0.12
```

```
     UNIFORM FROUDE NUMBER =    0.046
     PRESSURE + MOMENTUM(POUNDS) =            9.91
     AVERAGED VELOCITY HEAD(FEET) =      0.000
     SPECIFIC ENERGY(FEET) =      0.258

================================================================
===========
     CRITICAL-DEPTH FLOW INFORMATION:
 ----------------------------------------------------------------
------------
     CRITICAL FLOW TOP-WIDTH(FEET) =         4.33
     CRITICAL FLOW AREA(SQUARE FEET) =           0.15
     CRITICAL FLOW HYDRAULIC DEPTH(FEET) =     0.04
     CRITICAL FLOW AVERAGE VELOCITY(FEET/SEC.) =     1.04
     CRITICAL DEPTH(FEET) =     0.04
     CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) =            0.50
     AVERAGED CRITICAL FLOW VELOCITY HEAD(FEET) =      0.017
     CRITICAL FLOW SPECIFIC ENERGY(FEET) =      0.054

================================================================
===========

  Problem Descriptions:
   NORMAL DEPTH FLO CALCULATIONS FOR 12" PIPE
   AREA DMA C-2


****************************************************************
***********
 >>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<<<<
 ----------------------------------------------------------------
------------
     PIPE DIAMETER(FEET) =   1.000
     PIPE SLOPE(FEET/FEET) =  0.0150
     PIPEFLOW(CFS) =         4.50
     MANNINGS FRICTION FACTOR = 0.013000

================================================================
===========
     CRITICAL-DEPTH FLOW INFORMATION:
 ----------------------------------------------------------------
------------
     CRITICAL DEPTH(FEET) =      0.89
     CRITICAL FLOW AREA(SQUARE FEET) =     0.736
     CRITICAL FLOW TOP-WIDTH(FEET) =   0.634
     CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) =           72.39
     CRITICAL FLOW VELOCITY(FEET/SEC.) =     6.113
     CRITICAL FLOW VELOCITY HEAD(FEET) =            0.58
     CRITICAL FLOW HYDRAULIC DEPTH(FEET) =      1.16
     CRITICAL FLOW SPECIFIC ENERGY(FEET) =            1.47
     NOTE:GIVEN NORMAL DEPTH IS LOWER VALUE OF TWO POSSIBLE.
     SUGGEST CONSIDERATION OF WAVE ACTION, UNCERTAINTY, ETC.
```

```
================================================================
===========
     NORMAL-DEPTH FLOW INFORMATION:
 ----------------------------------------------------------------
------------
     NORMAL DEPTH(FEET) =      0.85
     FLOW AREA(SQUARE FEET) =      0.71
     FLOW TOP-WIDTH(FEET) =     0.712
     FLOW PRESSURE + MOMENTUM(POUNDS) =           72.61
     FLOW VELOCITY(FEET/SEC.) =           6.319
     FLOW VELOCITY HEAD(FEET) =           0.620
     HYDRAULIC DEPTH(FEET) =      1.00
     FROUDE NUMBER =     1.114
     SPECIFIC ENERGY(FEET) =            1.47

================================================================
===========
```

Attachment D – SWPPP Forms

Form A
SWPPP Amendment Log

Amend. No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

Form B

Non-Stormwater Discharge Evaluation

- Date of evaluation: _____
- Description of the evaluation criteria used:
  _____
  _____
  _____
  _____
- List of the outfalls or onsite drainage points that were directly observed during the evaluation:
  _____
  _____
  _____
  _____
- Different types of non-stormwater discharge(s) and source locations:
  _____
  _____
  _____
- Action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge:
  _____
  _____
  _____
  _____

Form C
Significant spills, leaks or other releases

Instructions:

- Include the descriptions and dates of any incidences of significant spills, leaks, or other releases that resulted in discharges of pollutants to waters of the U.S., through stormwater or otherwise; the circumstances leading to the release and actions taken in response to the release; and measures taken to prevent the recurrence of such releases.
- Provide information, as shown below, for each incident, and attach additional documentation (e.g., photos, spill cleanup records) as necessary. Repeat as necessary by copying and pasting the fields below.

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Maintenance for Control Measures, Equipment & Systems

Form D

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
  - the control measure/equipment maintained,
  - date(s) of regular maintenance,
  - date(s) of discovery of areas in need of repair/replacement, and for repairs,
  - date(s) that the control measure/equipment was returned to full function, and
  - the justification for any extended maintenance/repair schedules (see Part 2.1.2.3 of the 2008 MSGP).

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure:
Regular Maintenance Activities:
Regular Maintenance Schedule:

Date of Action:
Reason for Action: ☐ Regular Maintenance ☐ Discovery of Problem
If Problem,
- Description of Action Required:
- Date Control Measure Returned to Full Function:
- Justification for Extended Schedule, if applicable:

Notes:

Industrial Equipment and Systems Maintenance Records (copy information below for each industrial equipment/system)

Industrial Equipment/Systems:
Regular Maintenance Activities:
Regular Maintenance Schedule:

Date of Action:
Reason for Action: ☐ Regular Maintenance ☐ Discovery of Problem
If Problem,
- Description of Action Required:
- Date Industrial Equipment Returned to Full Function:
- Justification for Extended Schedule, if applicable:

Notes:

Form E

POLLUTION PREVENTION BRIEFING AND TRAINING OUTLINE AND LOG SHEET

Date of Briefing: _____

Briefing Conducted by: _____

In accordance with the Industrial General Permit, and in order to ensure adequate understanding of the Stormwater Pollution Prevention Plan (SWPPP) for this facility, training will be conducted for employees who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities related to the SWPPP, including all members of the facility's stormwater Pollution Prevention team. Training will be conducted upon new hire and at least once per year to inform employees of the components and goals of the facility's SWPPP, and will include at least the topics listed below. Use this form to document attendance.

- Contents and purpose of the SWPPP for the Facility, including the contact list and telephone numbers, and including potential spill flow routes and strategic barricading points.
- Facility features and operation designed to minimize stormwater pollution, including product and chemical loading and unloading procedures.
- Good housekeeping and material management measures to be implemented at the Facility.
- Operation and maintenance of equipment to prevent spills of oil, chemicals, and other materials.
- Inspection requirements and responsibilities for the SWPPP.
- Recordkeeping requirements and responsibilities for the SWPPP.
- Specific control measures at the facility, what and where they are located, and how to ensure they are maintained in good working order.
- How to recognize unauthorized discharges;
- Spill response and reporting procedures for the facility.
- Spill events or failures at this or other company sites.
- Applicable pollution control laws, rules and regulations.
- Other

Facility personnel in attendance:

_____ _____

_____ _____

_____ _____

_____ _____

Monthly Inspection Reports
Form F

Instructions:

- Include in your records copies of all routine facility inspection reports completed for the facility.
- The sample inspection report is consistent with the requirements in Parts 4.1 of the 2008 MSGP relating to routine facility inspections. Facilities subject to State industrial stormwater permits may also find this form useful. If your permitting authority provides you with an inspection report, use that form.

Using the Sample Routine Facility Inspection Report

- This inspection report is designed to be customized according to the specific control measures and activities at your facility. For ease of use, you should take a copy of your site plan and number all of the stormwater control measures and areas of industrial activity that will be inspected. A brief description of the control measures and areas that were inspected should then be listed in the site-specific section of the inspection report.
- You can complete the items in the "General Information" section that will remain constant, such as the facility name, NPDES tracking number, and inspector (if you only use one inspector). Print out multiple copies of this customized inspection report to use during your inspections.
- When conducting the inspection, walk the site by following your site map and numbered control measures/areas of industrial activity to be inspected. Also note whether the "Areas of Industrial Materials or Activities exposed to stormwater" have been addressed (customize this list according to the conditions at your facility). Note any required corrective actions and the date and responsible person for the correction.

Stormwater Industrial Monthly Facility Inspection Report

General Information			
Facility Name			
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			

Weather Information
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds ❑ Other: Temperature:
Have any previously unidentified discharges of pollutants occurred since the last inspection? ❑Yes ❑No If yes, describe:
Are there any discharges occurring at the time of inspection? ❑Yes ❑No If yes, describe:

Control Measures

	Structural Control Measure	Control Measure is Operating Effectively?	If No, In Need of Maintenance, Repair, or Replacement?	Corrective Action Needed and Notes (identify needed maintenance and repairs, or any failed control measures that need replacement)
1	Detention Basin and Bio-Retention Swale: Free of debris and sediments, vegetation maintained, erosion controlled, outlet\s free and clear	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
2	Stormwater Collection System: Catch basin free and clear, replace sponges/filters as necessary	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
3	Clarifiers: Inspection and maintenance procedures as recommended by manufacturer	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
4		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
5		❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

Areas of Industrial Materials or Activities Exposed to Stormwater

Below are some general areas that should be assessed during routine inspections. Customize this list as needed for the specific types of industrial materials or activities at your facility.

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
1	Material loading/unloading and storage areas	❑Yes ❑No ❑ N/A	❑Yes ❑No	
2	Equipment operations and maintenance areas	❑Yes ❑No ❑ N/A	❑Yes ❑No	
3	Fueling areas	❑Yes ❑No ❑ N/A	❑Yes ❑No	
4	Outdoor vehicle and equipment washing areas	❑Yes ❑No ❑ N/A	❑Yes ❑No	
5	Waste handling and disposal areas	❑Yes ❑No ❑ N/A	❑Yes ❑No	
6	Erodible areas/construction	❑Yes ❑No ❑ N/A	❑Yes ❑No	
7	Non-stormwater/ illicit connections	❑Yes ❑No ❑ N/A	❑Yes ❑No	
8	Dust generation and vehicle tracking	❑Yes ❑No ❑ N/A	❑Yes ❑No	
9	(Other)	❑Yes ❑No ❑ N/A	❑Yes ❑No	
10	(Other)	❑Yes ❑No ❑ N/A	❑Yes ❑No	
11	(Other)	❑Yes ❑No ❑ N/A	❑Yes ❑No	
12	(Other)	❑Yes ❑No ❑ N/A	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

Notes

Use this space for any additional notes or observations from the inspection:

CERTIFICATION STATEMENT

"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 gathered and evaluated 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."

Print name and title: _____

Signature: _____Date:_____

Form G
Sample Visual Monitoring
STORMWATER VISUAL ASSESSMENT GUIDELINES

A storm water sample will be collected from each outfall, if possible, and a visual assessment performed (grab samples will be used).

- Two samples shall be collected and analyzed from qualifying storm events (QSEs) shall be collected within the first half of each reporting year (July 1 to December 31), and tw0 QSEs within the second half of the reporting year (January 1 to June 30).
- A Qualifying Storm Event (QSE) is a precipitation event that a) produces a discharge for at least one drainage area; and b) is preceded by 48 hours with no discharge from any drainage area.
- Samples from each discharge location shall be collected within four (4) hours of a) the start of discharge; or b) the start if facility operations if the QSE occurs within the previous 120hour period (e.g., for storms with discharges that begin during the night for facilities with day-time operating hours). Sample collection is required during scheduled facility operating hours and when sampling conditions are safe in accordance with Section XI.C.6.a.ii.

The following table is an example of what you should look for during the visual assessment of storm water discharge.

PARAMETER	METHOD	EXAMPLE RESULTS
Color	Visual	Clear, yellow, red, brown, milky, etc.
Odor	Smell	None, earthy, sewage, musky rotten eggs, petroleum, etc.
Clarity	Visual (look through the container and read)	1) Can't see through bottle 2) Can see through, but can't read newsprint 3) Can see through, and can read newsprint 4) Pretty clear, but not as clear as bottled water 5) As clear as bottled water
Floating solids	Visual	Yes/No - Describe
Settled solids	Visual (after settling for approximately one half hour)	Describe the amount of solids that settled
Suspended solids	Visual (look through container)	Yes/No - Describe
Foam	Visual	Yes/No – Describe thickness, color, how much surface it covers
Oil/fuel sheen	Visual (top of water)	Color and amount
Other obvious indicators of storm water pollution	Visual	Tell it like you see it

If evidence of stormwater contamination is observed during the visual assessment, provide on the Report form the response action taken, documenting the source investigation and any remediation taken, with the date of correction. Revise the BMPs as necessary if the visual observations indicate pollutant sources have not been adequately addressed. Completed Stormwater Visual Assessment Report forms must be kept with the SWPPP. A Report form is provided on the next page.

STORMWATER VISUAL ASSESSMENT FORM

Date:		Duration of Rainfall Event (hrs):	
Outfall ID/Sample Location:		Time of Sample Collection:	
Nature of Discharge (runoff or snowmelt)			
Days Since Previous Measurable Storm Event:		Time of Visual Assessment:	

PARAMETER	METHOD	RESULTS	CORRECTIVE ACTION NEEDED (Y/N)
Color	Visual		
Odor	Smell		
Clarity	Visual (look through the container and read)		
Floating solids	Visual		
Settled solids	Visual (after settling for approximately one half hour)		
Suspended solids	Visual (look through the container)		
Foam	Visual		
Oil/fuel sheen	Visual (top of water)		
Other obvious indicators of storm water pollution	Visual		

1) If it was not possible to collect a sample due to absence of discharge or adverse conditions, explain why:

_____

2) If storm water contamination was observed, identify possible source(s): _____

_____

3) If it was not possible to collect the sample within the first 4 hours of actual discharge from the facility, explain why: _____

_____

4) Signatures

Person collection the sample/performing visual assessment:

Name_____ Signature_____

Form H
Annual Evaluation

Completed By: _____

Area Inspected	Inspection Procedure	Comments*	Action Required(Y/N)
Vehicle and Container Maintenance Areas	Inspect the areas. Is there a potential for storm water to contact lubricants, etc.? Check for storage (secondary containment) of antifreeze, solvents, detergent, cleansers, hydraulic and lubricating fluids, and paint. Are they stored in a manner to prevent spills or contact with storm water or precipitation? Are painting operations performed in a way that prevents overspray?		
Vehicles and Equipment (parking and storage)	Check for leaks of oil or fuel. Is the equipment or vehicle included in a preventative maintenance program? Are leaks from parked vehicles and containers being cleaned up regularly?		
Vehicle Maintenance	Make sure that the greasy rags, oil filters, air filters, batteries, hydraulic fluids, transmission fluid, radiator fluid, degreasers have been disposed of properly. Inspect entire maintenance area for proper implementation of control measures and for leaks/spills.		
Aboveground Liquid Storage	Inspect secondary containment and all valves, piping, and joints. Are fluids stored in a manner to prevent spills or contact with storm water or precipitation? Is there visible contamination?		
BMPs	Review BMPs listed in Section 3.15. Applicable BMPs being followed?		
Other			
Other			

Title: _____

Date: _____

Attach additional sheets if necessary

Attachment E – Monitoring and Sampling Guide

EPA 832-B-09-003

Industrial Stormwater Monitoring and Sampling Guide

March 2009

Final Draft

Acknowledgements

All photos are courtesy of Tetra Tech, Inc. Sampling illustrations in Section 2 are courtesy of Washington Department of Ecology's guide on *How To Do Stormwater Sampling: A guide for industrial facilities* (available at http://www.ecy.wa.gov/pubs/0210071.pdf)

Final Draft
Prepublication Copy

A formatted version of this guide will be available in April, 2009.

Industrial Stormwater Monitoring and Sampling Guide

The Industrial Stormwater Monitoring and Sampling Guide ("guide") is a how-to primer for industrial facility operators on how to conduct visual and analytical monitoring of stormwater discharges. The target audience is operators of facilities subject to the U.S. Environmental Protection Agency's (EPA) 2008 Multi-Sector General Permit (2008 MSGP) or a similar State-issued industrial stormwater permit. The information presented will also be useful to anyone interested in industrial stormwater monitoring. The procedures presented in this guide, specifically related to monitoring methodology and quality assurance, will help ensure that stormwater samples yield usable information.

The 2008 MSGP covers specific industrial activities (see Appendix D of the 2008 MSGP, available at www.epa.gov/npdes/msgp) in States, territories, and Indian Country lands where EPA is the National Pollutant Discharge Elimination System (NPDES) permitting authority (i.e., in those States or territories not authorized to issue NPDES permits themselves – see Appendix C of the 2008 MSGP).

This guide does not impose any new legally binding requirements on EPA, States, or the regulated community, and does not confer legal rights or impose legal obligations upon any member of the public. In the event of a conflict between the discussion in this document and any statute, regulation, or permit, this document would not be controlling.

Monitoring vs. Sampling. **In this guide, "sampling" refers to the actual, physical collection and analysis of stormwater samples. The term "monitoring" refers to both sampling and visual observations of stormwater discharges, including the related preparation and documentation tasks.**

Interested parties are free to raise questions and objections about the substance of this guide and the appropriateness of the application of this guide to a particular situation. EPA and other decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those described in this guide where appropriate.

1. Introduction to Stormwater Monitoring and Sampling

Most industrial stormwater permits require installation and implementation of control measures to minimize or eliminate pollutants in stormwater runoff from your facility. The control measures you choose for your facility must be documented in your facility-specific Stormwater Pollution Prevention Plan (SWPPP). The results of your stormwater monitoring will help you determine the effectiveness of your control measures, and overall stormwater management program. Evaluation of your stormwater management program will include inspections, visual assessments, and monitoring (i.e., sampling) of specified stormwater discharges. Regular stormwater inspections and visual assessments provide qualitative information on whether there are unaddressed potential pollutant sources at your site, and whether existing control measures are effective or need to be reevaluated. Stormwater sampling provides quantitative (i.e., numeric) data to determine pollutant concentrations in runoff and, in turn, the degree to which your control measures are effectively minimizing contact between stormwater and pollutant sources, and the success of your stormwater control approach in meeting applicable discharge requirements or effluent limits.

The following are the types of industrial stormwater monitoring requirements typically included in industrial general permits:

- **Visual Assessments of Discharges.** Permittees are required to regularly and frequently (e.g., quarterly under the 2008 MSGP) take a grab sample during a rain event and assess key visual indicators of stormwater pollution – color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other qualitative markers of pollution. The findings of these assessments are used to trigger further facility inspections and corrective actions to modify problems found at the site.

- **Indicator or Benchmark Sampling**. Stormwater samples are collected from a site's discharge points (or outfalls) for laboratory analysis and the results are compared with benchmark pollutant concentrations as an indicator of the performance of stormwater control measures. A benchmark pollutant concentration is a level above which a stormwater discharge could adversely affect receiving water quality (and control measures must be evaluated) and, if below, the facility is not expected to have an impact on receiving water quality. This type of monitoring differs from "compliance monitoring" (see below) in that exceedances of the indicator or benchmark levels are not considered violations, but rather "red flags" that could point to a problem at the site with exposed pollutant sources or control measures that are not working correctly. For instance, the 2008 MSGP includes "benchmarks" that are based to a large degree on EPA's aquatic life criteria. Where the average of samples taken over four consecutive quarters exceed the applicable benchmark concentration of a particular pollutant, the permittee is required to investigate whether the higher pollutant levels can be attributed to some pollutant source or faulty control measure(s), and to address such problems through corrective action and possibly further monitoring.

- **Compliance Sampling.** Where a facility is subject to one of the Federal effluent limitation guidelines (ELGs) addressing limits on stormwater runoff, sampling is required to determine compliance with those limits. Table 1 provides a list of the current applicable effluent limitation guidelines.

Table 1. Applicable Effluent Limitations Guidelines (2008 MSGP Part 2.1.3)

Regulated Activity	40 CFR Part/Subpart
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A
Runoff from asphalt emulsion facilities	Part 443, Subpart A
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, or D
Runoff from hazardous waste landfills	Part 445, Subpart A
Runoff from non-hazardous waste landfills	Part 445, Subpart B
Runoff from coal storage piles at steam electric generating facilities	Part 423

These limits are required to be included in all general industrial permits. Typically, permits require corrective action and further sampling when an effluent limitation is exceeded. An exceedance of an applicable effluent limitation guideline constitutes a violation of the permit.

- **Monitoring Requirements for Discharges to Impaired Waters** - General industrial permits may have special monitoring requirements for facilities that discharge pollutants of concern into impaired waters.

For an explanation of these monitoring requirements in the 2008 MSGP see Part 6.2. Part 8 of the 2008 MSGP includes the benchmark and effluent limitation guideline monitoring requirements for each of the industrial sectors affected by such requirements.

2. Preparation for Monitoring

This section describes the information you will need before monitoring. While this guide is meant to be a general primer for anyone interested in industrial stormwater monitoring, Section 2 follows the organization of the 2008 MSGP. Many State general permits are very similar to the 2008 MSGP. It is EPA's hope that this format will be of use to permittees in most states. However, if you are subject to a State industrial general permit, you should compare your permit's monitoring requirements to the requirements reflected in this guide to ensure that you are following all applicable State requirements.

In general, preparation is critical to make sure that industrial stormwater monitoring is conducted properly and in a timely manner. Most of this information should have been collected previously for the purposes of submitting your permit application or Notice of Intent (NOI), and in developing the monitoring procedures section of your stormwater pollution prevention plan (SWPPP). However, this guide reviews some of the steps necessary to develop this information, such as the site map component of the SWPPP, in case facilities have not already done so. If you have already completed any of these steps in this section, you can skip to the next application section or subsection in this guide. For more information on how to develop a SWPPP, refer to EPA's guide *Developing Your Stormwater Pollution Prevention Plan: A Guide for Industrial Operators*, available on EPA's website at www.epa.gov/npdes/stormwater/msgp.

If you have already submitted your NOI, the following documents will serve as good resources for information that you will need prior to monitoring:

- A copy of your NOI or application submitted to EPA or a State, and your assigned permit registration number.

- A copy of the EPA/State response to your NOI/permit application submission if it includes specific details pertaining to your monitoring (e.g., pollutants required to be monitored, frequency of monitoring, benchmark or compliance sampling requirements, etc.).

- A copy of your applicable permit, including the accompanying fact sheet.

- A complete copy of your SWPPP, which must include a detailed site map of your facility with locations of all stormwater monitoring points, and a description of the procedures you or your

stormwater pollution prevention team will follow when conducting monitoring and visual assessments.

2.1 Determine Where Stormwater Is Discharged From Your Property

If you have not already done so, walk the grounds and perimeter of your facility during a storm event to identify where runoff discharges from the site (known as "outfalls"). Outfalls are locations where stormwater exits the facility property, including pipes, ditches, swales, and other structures that transport stormwater. If possible, walk outside the boundary of your facility to identify outfalls that may not be apparent from within your site.

Stormwater discharges to the slot drain and is conveyed offsite through a valved pipe.

You should note where:

- Concentrated stormwater exits your facility (e.g., through a pipe, ditch or similar conveyance). These outlets are usually good sampling points.

- Dispersed runoff (i.e. sheet flow) flows offsite (e.g., through a grassy area or across a parking lot). Note whether concentrated flows commingle with the sheet flow.

- Storm drain inlets or catch basins are located. Try to determine where the storm drains send your runoff (e.g., to your municipal separate storm sewer system [MS4], to a combined sewer system, to the separated sanitary sewer, or directly to a nearby waterbody).

- Authorized non-stormwater discharges commingle with stormwater prior to discharge (such commingled discharges may be covered under your permit).

- Areas where stormwater might enter your facility from neighboring facilities and commingle with your stormwater discharges.

Terms to Know:

Combined Sewer System: Combined sewer systems are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies.

MS4: A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) which are owned and operated by a … public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes … that discharges to waters of the United States; designed or used for collecting or conveying stormwater; which is not a combined sewer; and which is not part of a publicly owned treatment works (POTW). [40 CFR 122.26(b)(8)].

Mark these locations on your facility site map, which will be included as part of your SWPPP, and label each outfall location with unique identifiers to differentiate them. For example, you may decide to name the different outfalls according to where the stormwater is being discharged, such as MS4-1, MS4-2, etc. for outfalls discharging to the MS4 or ST-1, ST-2, etc. for outfalls discharging directly to an adjacent stream. Using unique identifiers will help you to coordinate monitoring requirements.

In addition to marking the outfalls on the map, you will need to determine the drainage area for each discharge point. If your facility is large and has significant changes in elevation, a topographic map may be necessary. However, if your facility is small and relatively flat, the best way to define the drainage area for each outfall is an on-the-ground visual assessment, preferably during a rain event. Sketch the basic drainage areas on the map for each outfall. Knowing the drainage area for each outfall is helpful when your sampling indicates problems at that outfall. You can focus your efforts on the industrial materials and activities in that drainage area, instead of the entire site, to identify what may be causing the problem.

2.2 Determine Where You Will Collect Samples

Now that you have determined the different points of discharge from your site, you will need to select the exact locations from which you will be collecting your stormwater samples. Note that Part 5.1.5.2 of the 2008 MSGP requires industrial operators to document in their SWPPPs the location where samples will be collected. Generally, industrial stormwater permits require that you sample stormwater discharges prior to the stormwater leaving your facility, and at a location downstream from all of your industrial materials and activities. The reason behind requiring such a location is so that the sample is

representative of your facility's discharge, taking into account the types of pollutants that may be contained in runoff from the property.

Appropriate sample locations include:

- Underground pipes that collect stormwater from drop inlets and convey stormwater to an offsite location (e.g., street, curb or MS4). Be sure you collect only the stormwater discharging from your facility and not the baseflow in the pipes that is being discharged from facilities upstream. Do not enter underground locations to collect samples. Use a pole with a sampling container attached at the end to collect the sample.

- Open ditches, gutters or swales that carry stormwater from your facility to an offsite location. If these conveyances contain runoff from another facility, it is important to note that in your SWPPP;

- Facility driveways and other street access points; and

- Outlets discharging offsite from onsite stormwater detention ponds or other types of structural control measures. It is important to sample at the OUTLET of your structural control measures, as opposed to the INLET of such structures, in order to determine the quality of the water after treatment.

Where to Sample When There Are Multiple Discharge Points

You are required to monitor all outfalls that receive stormwater discharges from your industrial activity. See Part 6.1.1 of the 2008 MSGP. If you have multiple stormwater discharge points at your facility, you need to identify which outfalls are associated with industrial materials and activities, and monitor those outfalls. Understanding the hydrologic connection between your outfalls and the parts of your facility that drain to those points, and the pollutants associated with the industrial activities in these areas, will assist you in designing a monitoring program that is representative of the pollutants being discharged from your site. Developing such an understanding will also help later on when you begin to assess your sampling results and determine where improvements could be made to your stormwater control measures. The site map you prepare (see Part 5.1.2 of the 2008 MSGP) will help you understand the correlation between your areas of potential pollutant sources, the direction of stormwater flow from those areas, and the discharge points.

Note that you are not required to monitor at outfall locations that receive stormwater flow only from unregulated areas of your site (i.e., there are no industrial materials or activities in the drainage area). For instance, a hypothetical facility may have two outfalls, one that receives discharges from an area where industrial materials are handled and stored, and a second outfall that receives discharges from an unregulated parking lot used by employees. In this scenario, the industrial permittee would only collect samples from the first outfall because it discharges stormwater associated with industrial activity. Alternatively, if the site's second outfall (e.g., the outfall receiving runoff from the parking lot) also drains areas of the facility with regulated industrial activities, then this outfall would also need to be sampled. In this situation, sampling for this outfall should be done at a location prior to where the two flows commingle so that you are capturing the industrial portion of the flow. See Part 6.1.2 of the 2008 MSGP.

Where to Sample if Outfalls Are Substantially Identical

If your facility has two or more outfalls whose discharges are "substantially identical," some industrial stormwater permits, including the 2008 MSGP, allow you to monitor the discharge at just one representative outfall and apply the results to the other substantially identical outfalls. EPA defines "substantially identical" in the 2008 MSGP as follows:

> "… two or more outfalls that you believe discharge substantially identical effluents, based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to stormwater, and runoff coefficients of their drainage areas …." See Part 6.1.1 of the 2008 MSGP.

The flexibility provided to permittees to sample at just one location, which is considered representative of all substantially identical outfalls, is an exception to the rule stated above that samples must be taken from all outfalls at a facility. Note that this exception does not apply to compliance monitoring (effluent limitation guideline monitoring), which must be conducted at each outfall to which the effluent guideline applies.

In choosing which of the substantially identical outfalls from which to sample, you should select the outfall that has been observed to have the most consistent flow. To use the substantially identical outfall exception, you must document in your SWPPP how the two or more outfalls are substantially identical, based on the above definition. You will need to document the following information:

- The locations of the outfalls;
- Estimated size of the drainage area (in square feet) for each outfall;
- General industrial activities conducted in the drainage area of each outfall;
- Control measures being implemented in the drainage area of each outfall;
- Why the outfalls are expected to discharge similar stormwater; and
- An estimate of the runoff coefficient of the drainage areas (0.0 no runoff potential to 1.0 all precipitation runs off).

The runoff coefficient is the ratio of excess runoff to the amount of precipitation for a given time over a given area, with a 0 (zero) runoff coefficient meaning no runoff potential and 1.0 (one) meaning a completely impervious surface and all stormwater runs off. The runoff coefficient is related to the amount of impervious surfaces (buildings, pavement, sidewalks, etc.) versus pervious surfaces (grass,

graveled areas, etc.) at the site. The more impervious surface a facility has, the larger the runoff coefficient. Light industrial facilities typically have a runoff coefficient between 0.50 and 0.80 and heavy industrial facilities typically have a runoff coefficient between 0.60 and 0.90.

Here is an example where a facility could take advantage of the "substantially identical outfalls" exception: a metal recycling facility with a large scrap metal pile has three separate outfalls that are each connected by their own drainage ditch to different portions of the same pile, and the runoff that is discharged is managed using the same type of control measure in each drainage area. In this scenario, the facility's operator can use the "substantially identical outfall" exception because the industrial activities at the site are all the same, the runoff flows through exposed areas that presumably contribute the same type of pollutants, and the drainage area has the same or similar runoff coefficients. Note that the substantially identical outfall exception could not be used if there were in fact differences in any of the required components defined above.

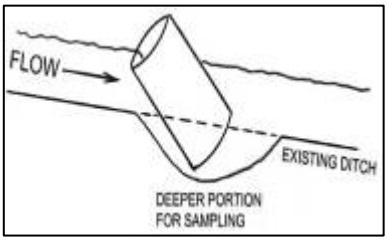
If your permit does allow you to use a substantially identical outfall exception, make sure you carefully review the type of monitoring for which this exception applies. For instance, while the 2008 MSGP allows permittees to use the substantially identical outfall exception for benchmark and visual assessment samples, the permit prohibits use of this exception for compliance monitoring (e.g., for use in showing compliance with numeric effluent limitation guidelines). Therefore, if a facility permitted under the 2008 MSGP is subject to a numeric limit based on an EPA effluent limitation guideline, it would have to monitor all outfalls at the site receiving flows from the applicable industrial activities. See Part 6.2.2.2 of the 2008 MSGP.

Where to collect a sample

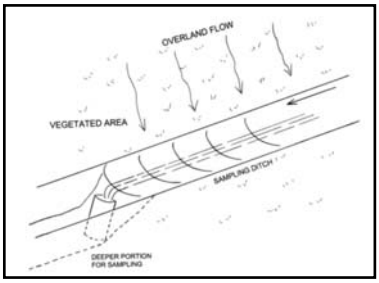
Sampling Sheet Flow

In some areas of your facility it may be difficult to obtain a sample because the runoff drains as sheet flow before it becomes concentrated enough for sampling. If the flow is too shallow to directly fill a collection bottle, you can overcome this by:

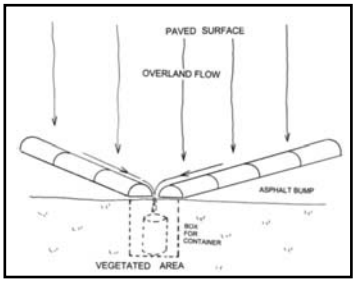
- Concentrating the sheet flow by excavating a small depression in an existing ditch or other location where stormwater runoff flows.



- Installing a trough, gutter or ditch to intercept and concentrate stormwater flow.



- Installing “speed” bumps to convey and concentrate a large area of sheet flow.



Collecting a sheet flow stormwater sample.

You should make these modifications during a period when rain is not forecast so any pollutants generated can be cleaned up before a storm hits. Also, if you dig a ditch or disturb the earth in some way, line the disturbance with concrete or plastic so that you do not contaminate your stormwater samples with sediment or other pollutants.

Sampling from a Pipe

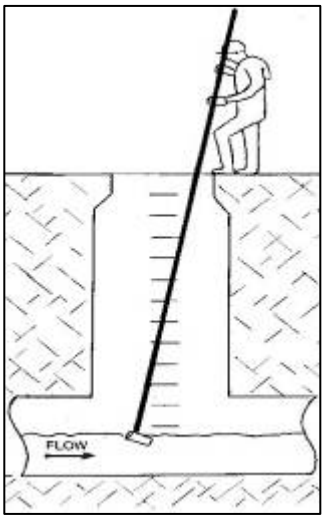
For runoff flowing through a pipe into a ditch or receiving water, you should sample the outflow directly from the pipe. For hard-to-reach pipes, it may be necessary to fasten a collection bottle to a pole (see Sampling from a Manhole in Table 2 below).

When collecting any type of stormwater sample it is imperative that the sample is collected before the stormwater reaches the receiving water.

Sampling From a Drainage Ditch or Swale

If your stormwater is discharged via a drainage ditch or vegetated swale, take a grab sample from a consistently flowing part of the ditch / swale. If the ditch / swale is too small or shallow, install a barrier device in the channel or deepen a small area so you are able to sample directly into the bottles. Allow sufficient time to pass after disturbing the bottom so that any solids stirred up do not contaminate your sample.

Sampling From a Stormwater Detention / Retention Basin or Other Treatment Device



If it is necessary for you to sample from a detention or retention basin, do so at the outfall of the structure. Collecting samples from stagnant or slowly moving water inside a pond will not yield a representative sample as the pollutants might not be adequately mixed. Stormwater basins may hold stormwater for long periods of time. Collect your sample within 30 minutes from when the pond begins to discharge.

Potential Sampling Issues

Depending on the location of your monitoring points, you may encounter additional challenges beyond deciding which sampling technique to employ at each site. Table 2 identifies some stormwater sampling problems common to industrial facilities and guidance for how EPA suggests you address them if they occur at your site.

Table 2. Solutions to Typical Stormwater Sampling Problems

Problem	Solution
Run-on from Neighboring Properties	Ideally, your stormwater samples will contain only runoff from your site. However, stormwater from a neighboring facility can "run on" and commingle with your own regulated discharge, possibly adding contaminants not found at your facility. You are responsible for any and all pollutants discharged from your site irrespective of the pollutants' origin and whether the other facility has permit coverage. This responsibility includes run-on discharges from neighboring properties if this discharge commingles with your own regulated discharge. To accommodate stormwater run-on, EPA requires as part of the SWPPP site description that you document the locations and sources of run-on. As part of this documentation, if you collect and analyze samples of the run-on, you will need to report all such findings in your SWPPP.
Stormwater from industrial areas commingles with stormwater discharges from non-industrial areas or areas not regulated under the MSGP before it reaches the surface water body or MS4.	Attempt to sample the industrial stormwater discharge before it mixes with stormwater from non-industrial areas.
Adverse Weather Conditions	High tides and high flow or flood conditions can cause stormwater conveyances to reach maximum capacity, pipes to become clogged or submerged, and other unrepresentative flow situations. High flows could also be dangerous, so you should use your best professional judgment when selecting sampling locations. In some cases you may need to sample at a point before the intended outfall location.
There are numerous stormwater outfalls in one area.	Construct an impound channel or join together flows by building a weir or digging a ditch to collect discharge at a low point for sampling purposes. This artificial collection point should be lined with plastic to prevent infiltration and the introduction of

Problem	Solution
	sediment. Or, alternatively, sample at several locations to represent total site runoff.
The outfall is inaccessible (examples include underwater discharges or unreachable discharges such as a pipe discharging out of a cliff).	Go upstream of the discharge until a sample can be taken (i.e., to the nearest manhole or inspection point). You may need to sample at several locations to best represent runoff from this discharge point if you cannot access an upstream location.
A facility has many sampling locations making it difficult to collect all of the samples during the first 30 minutes of discharge, as required by the 2008 MSGP.	Have a sampling crew ready when storms are forecast so that all outfalls can be sampled during the first 30 minutes. Also, automatic samplers may be used to collect samples within the first 30 minutes, triggered by the amount of rainfall, the depth of flow, flow volume or time.
A stormwater sample location is beneath a manhole.	For accessibility and safety, use a sampling pole to collect samples from a manhole. Before a person can enter a manhole to collect a sample, they must be trained in confined space entry.
Stormwater from more than one industry type is commingled.	You must comply with monitoring requirements for all applicable sectors and SIC codes.

2.3 Determine Which Types of Monitoring Requirements Apply At Each Outfall

The next step in preparing for monitoring at your site is to determine the type of monitoring requirements that correspond to each outfall. The type of monitoring requirements to which you are subject will differ according to your permit. Different monitoring requirements may also apply to individual outfalls on your property based on the type of industrial activity discharging to that point, and even the receiving water to which you are discharging. Using your permit, determine the type of monitoring requirements to which your specific facility is subject, and document in your SWPPP the specific monitoring requirements that applies to each outfall, including the frequency of monitoring and the specific parameters that must be monitored.

Recall that it is not necessary to monitor an outfall if it does not have any industrial activity associated with it (e.g., discharge from an employee parking lot that does not commingle with stormwater runoff from an area of industrial activity) or if the outfall does not drain to a surface water (i.e. the outfall drains to a sanitary sewer or combined sewer system).

The following applies to the types of monitoring required under the 2008 MSGP. If you are not subject to the 2008 MSGP, consult your State permit to determine your monitoring requirements.

- ***Visual Assessments*** (Part 4.2 of the 2008 MSGP) – All 2008 MSGP permittees are required to collect samples of their stormwater discharge for visual inspection. The following qualitative characteristics must be assessed:

    - color;
    - odor;
    - clarity;
    - floating solids;
    - settled solids;
    - suspended solids;
    - foam;
    - oil sheen; and

- other obvious indicators of stormwater pollution.

Visual assessments must be conducted at all outfalls, although if several outfalls are "substantially identical" then only one visual assessment must be conducted on the set of outfalls. The sampling frequency for visual assessments under the 2008 MSGP is quarterly. The monitoring quarters are: January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31.

- ***Benchmark Monitoring*** (Part 6.2.1 of the 2008 MSGP) – This type of analytic monitoring applies to certain industrial sectors regulated under the 2008 MSGP. Permittees subject to these requirements must take periodic grab samples of their stormwater discharge to compare the concentrations of key indicator pollutants to their corresponding benchmark concentrations. The benchmark values are based in large part on EPA's aquatic life water quality criteria and are meant to serve as indicators of how well a facility's stormwater control efforts are working. If a particular benchmark is exceeded, this indicates to a permittee that there may be a problem at the site, such as a spill, exposed pollutant source, or a faulty control measure, and triggers a required review of the potential problem to determine what corrective actions are necessary. For example, a total suspended solids (TSS) concentration found in a benchmark sample of greater than 100 mg/L, which is the applicable benchmark concentration for TSS, would require a facility to re-evaluate and potentially revise control measures implemented to control dust, soil erosion, or other sources of suspended solids. Note that the exceedance of the benchmark is not a violation (because benchmarks are typically not enforceable limits), but the failure to conduct the follow-up investigation and applicable corrective actions would be a violation of the permit.

Be sure to update your SWPPP and site map whenever you change or add new control measures. Control measure maintenance activities must be documented (preferably in a log), and such records must be kept with your SWPPP and stormwater file.

Determine whether you are subject to any benchmark monitoring requirements based on your particular industrial sector or subsector. The benchmark monitoring requirements differ based on the sector or subsector under which a particular facility falls. Note that not all sectors are subject to this type of monitoring. Appendix D in the 2008 MSGP provides the Standard Industrial Classification (SIC) code and activity codes categorized by sectors and subsectors. Use Appendix D to link your industrial activities with their associated SIC code sectors / subsectors. Your facility will have a primary industrial activity and associated SIC or activity code (which is the major determinant of your permit requirements), and, possibly, additional secondary sectors / subsectors with additional requirements for which you must comply. Next, using Part 8 of the 2008 MSGP, under your particular sector or subsector, determine whether you are subject to any benchmark monitoring requirements, and the corresponding benchmark that applies. Consider the following example: if you operate a gold mine (subsector G2) you are subject in Part 8.G.8.2 to the following benchmark monitoring requirements:

Table 3. Subsector G-2.		
Subsector (Discharges may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Cutoff Concentration**
Subsector G2. Iron Ores; Copper Ores; Lead and Zinc Ores; Gold and Silver Ores; Ferroalloy Ores, Except Vanadium; and Miscellaneous Metal Ores (SIC Codes 1011, 1021, 1031, 1041, 1044, 1061, 1081, 1094, 1099) (Note: when analyzing hardness for a suite of metals, it is more cost effective to add analysis of calcium and magnesium, and have hardness calculated than to require hardness analysis separately)	Total Suspended Solids (TSS)	100 mg/L
	Turbidity	50 NTU
	pH	6.0-9.0 s.u.
	Hardness (as $CaCO_3$; calc. from Ca, Mg)[1]	no benchmark value
	Total Antimony	0.64 mg/L
	Total Arsenic	0.15 mg/ L
	Total Beryllium	0.13 mg/L
	Total Cadmium[1]	Hardness Dependent
	Total Copper[1]	Hardness Dependent
	Total Iron	1.0 mg/L
	Total Lead[1]	Hardness Dependent
	Total Mercury	0.0014 mg/L
	Total Nickel[1]	Hardness Dependent
	Total Selenium	0.005 mg/L
	Total Silver[1]	Hardness Dependent
	Total Zinc[1]	Hardness Dependent

Based on this table, you then know the pollutant parameter for which you must conduct benchmark monitoring, and the corresponding benchmark concentration against which you will compare each individual grab sample. Each sector or subsector subject to benchmark monitoring requirements includes a similar table in Part 8 of the 2008 MSGP.

After you have determined which (if any) benchmark sampling requirements apply, document in your SWPPP which outfalls are subject to such requirements, the frequency of monitoring, and the parameters that must be analyzed. If your facility has multiple outfalls, be aware that there may be different requirements for different outfalls depending on the type of industrial activity conducted in the drainage area of each outfall. You are only required to conduct benchmark monitoring for those outfalls with discharges from the specific sectors / subsectors that are affected by such requirements. Where an outfall includes no discharges from those sectors or subsectors for which benchmark monitoring requirements apply, then no benchmark samples need to be taken at that outfall.

The required benchmark monitoring frequency under the 2008 MSGP is quarterly. The monitoring quarters, beginning with the first quarter on April 1, 2009 are: April 1 – June 30, July 1 – September 30, October 1 – December 31 and January 1 – March 31.

Exceptions for Inactive and Unstaffed Sites (Part 6.2.1.3 of the 2008 MSG) – The requirement for benchmark monitoring does not apply to inactive and unstaffed facilities, providing there are no industrial materials or activities exposed to stormwater. This exception only applies to benchmark monitoring requirements and not to the other types of monitoring described above.

To claim this special exemption, you must note on the next quarterly benchmark monitoring report that your facility is inactive and unstaffed, and you must keep an inactive and unstaffed certification onsite (see Part 4.2.1.3). The requirement for conducting a quarterly visual assessment also does not apply inactive and unstaffed sites, as long as there are no industrial materials or activities exposed to stormwater. If you are invoking the exception for inactive and unstaffed sites, maintain a signed and certified statement onsite with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater.

Hardness-Dependent Benchmarks (Appendix J of the 2008 MSGP) – The benchmark values of some metals are dependent on the level of hardness in your receiving waters (see 2008 MSGP, Appendix J). Hardness is a characteristic of water that results from the presence of dissolved salts, especially calcium sulfate or bicarbonate, and is usually reported as carbonate, noncarbonate or calcium + magnesium (Ca + Mg). If you are required to monitor for a hardness-dependent pollutant, you must first determine the hardness of your receiving water before you can establish the corresponding benchmark concentration.

- ***Effluent Limitations Monitoring*** (Part 6.2.2 of the 2008 MSGP) – Eight of the 2008 MSGP's 29 industrial sectors are required to monitor to determine if they comply with EPA-defined effluent limitation guidelines. These monitoring requirements are included in Part 8 of the 2008 MSGP. Effluent limitation guidelines are legally enforceable limitations that must not be exceeded in stormwater discharges.

  Similar to the benchmark monitoring requirements, samples only need to be taken at those outfalls with discharges from the specific activities that are subject to effluent limitation guidelines; otherwise these requirements do not apply. As stated previously, permittees subject to these monitoring requirements must take samples at all applicable outfalls, and no exceptions are given for substantially identical outfalls. However, if you are required to monitor a pollutant both for benchmark and effluent limitation guideline purposes, you only need to take one sample for both requirements.

When monitoring requirements overlap, e.g., TSS once per year for an effluent limit and once per quarter for benchmark monitoring, you may use a single sample to satisfy both monitoring requirements (i.e., one of your four quarterly benchmark samples would be used for your yearly effluent limit sample).

Table 4 identifies the industrial activities that are subject to effluent limitation guideline monitoring requirements and the associated sampling parameters. Effluent limitation guideline samples must be taken once per year (see Part 8 of the 2008 MSGP for the numerical values of each effluent limit).

Table 4. Required Monitoring for Effluent Limitations Guidelines

Regulated Activity	Where in 2008 MSGP	Sector	Effluent Limit Parameters
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 8.A.7	A	debris, pH
Runoff from phosphate fertilizer manufacturing facilities	Part 8.C.4	C	total P, fluoride

Regulated Activity	Where in 2008 MSGP	Sector	Effluent Limit Parameters
Runoff from asphalt paving and roofing emulsion facilities	Part 8.D.4	D	total suspended solids (TSS), oil and grease, pH
Runoff from material storage piles at cement manufacturing facilities	Part 8.E.5	E	TSS, pH
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 8.J.9	J	TSS, pH
Runoff from hazardous waste landfills	Part 8.K.6	K	biochemical oxygen demand (BOD_5), TSS, ammonia, alpha terpineol, benzoic acid, p-cresol, phenol, total recoverable zinc, pH, aniline, naphthalene, pyridine, total recoverable chromium,
Runoff from non-hazardous waste landfills	Part 8.L.10	L	biochemical oxygen demand (BOD_5), TSS, ammonia, alpha terpineol, benzoic acid, p-cresol, phenol, total recoverable zinc, pH
Discharges from coal storage piles	Part 8.O.8	O	TSS, pH

Determine whether you are subject to any effluent limitation guideline monitoring requirements. Document in your SWPPP which outfalls are subject to such requirements, the frequency of monitoring, and the parameters that must be analyzed.

- ***Impaired Waters Monitoring*** (Part 6.2.4 of the 2008 MSGP) – The 2008 MSGP requires facilities to monitor, at least in the first year of permit coverage (and yearly thereafter depending on the sample results in the first year), for the presence of any pollutant causing an impairment to their receiving water. This requirement is triggered regardless of whether the particular pollutant is used or stored at the industrial site; however the facility may be able to discontinue monitoring after the first year if the pollutant is not present in the sample and is not expected to be present in any discharge. In advance of conducting this monitoring, you should already have a good idea of whether the pollutant will be found in your discharge. When you developed your SWPPP, you conducted a complete inventory of your site to determine what pollutants or pollutant constituents could be discharged in stormwater runoff. See Section 3.1 of EPA's guide, *Developing Your Stormwater Pollution Prevention Plan: A Guide for Industrial Operators*, particularly the discussion about conducting an "Inventory of Materials and Pollutants". Using this inventory from your SWPPP, you will be able to determine if any materials stored or used at your facility could contribute to impairment of your receiving water.

  The next section of this guide includes specific steps to help you determine if you are subject to impaired waters monitoring requirements. After following those steps, document in your SWPPP which outfalls are subject to impaired waters monitoring requirements, the frequency of sampling, and the parameters that must be monitored.

- ***State / Tribal Monitoring Requirements*** (Part 6.2.3 of the 2008 MSGP) – The 2008 MSGP includes a number of additional monitoring requirements that are unique to individual States

and/or Indian Country lands. These requirements are set out in Part 9 of the permit. These requirements may include additional or more frequent benchmark monitoring requirements, alternative benchmark thresholds, or additional parameters that must be monitored to establish compliance with applicable water quality standards.

Based on the State or Indian Country land in which they are located, each 2008 MSGP permittee must consult the applicable Part 9 section to determine what, if any, additional monitoring requirements apply. If you are subject to such requirements, you must document in your SWPPP which outfalls are subject to these provisions, the frequency of applicable sampling, and the parameters that must be monitored

- ***Additional Monitoring Required by EPA –*** It is possible EPA may require additional monitoring (see 2008 MSGP Part 6.2.5). You will be notified by the Agency if additional monitoring is required.

2.4 Determine if Your Facility is Subject to Impaired Waters Monitoring Requirements

If you are required by your industrial stormwater permit to monitor for pollutants that cause impairment to your receiving water, you must first identify the receiving waters (e.g. ditch, creek, intermittent stream, lake, arroyo, etc.) into which your facility discharges stormwater and mark them on your site map. Note that you will have already identified your receiving waters if you filed an NOI to be covered by the 2008 MSGP.

A. Identify Your Receiving Water(s)

Do these monitoring requirements apply to me if I discharge into a dry ditch?
Yes, if the ditch eventually conveys the runoff to a waters of the United States.

There are several ways to identify your receiving waters. Your receiving water may be a lake, stream, river, ocean, wetland or other waterbody, and may or may not be located adjacent to your facility. Your facility might discharge directly into its receiving water, or indirectly to the receiving water by discharging first through an MS4, ditch, or other conveyance.

If the discharge from your facility does not discharge into an underground storm sewer system, you can use your site map and local topographic maps to pinpoint the closest waterways. Using the contours on the topographic map and your facility's outfall locations, determine the direction stormwater runoff flows from your facility. Once you know the direction of flow, you should be able to identify the receiving waters into which you discharge.

Sample section of a U.S.G.S. quadrangle map, with arrows showing direction of flow.

After identifying where your stormwater enters a waterbody, identify any additional interconnected waters for at least one linear mile downstream from the entrance point of your discharge (in case there are concerns about impacts to these downstream waters).

Resources to help you identify receiving waters:

- EPA's Water Locator Tool (available at www.epa.gov/npdes/stormwater/msgp) allows you to locate nearby receiving waters and impaired waterbodies within a 10 mile radius of your facility.

- EPA's Enviromapper (www.epa.gov/enviro/emef) enables you to find nearby waterbodies by entering your facility's zip code, address, facility name or identification number, EPA Region, watershed, or latitude/longitude data. Additional information on the location of impaired waterbodies can also be obtained.

- Topographic maps, which can be obtained from the U.S. Geological Survey (USGS) at http://topomaps.usgs.gov/ordering_maps.html, or through a retailer.

If your stormwater drains into an MS4, you will likely need to contact the operator of the system (e.g., the local public works department, the highway department, etc.) to identify the first receiving water your stormwater is released to after entering the MS4. Some MS4s have their storm sewer infrastructure maps available online.

Remember, the MS4 into which your facility's stormwater discharges is NOT your receiving water. The first waterbody that the MS4 discharges to after receiving your stormwater is the receiving water for your facility.

B. Determine if Your Receiving Water is Impaired and Whether a TMDL Has Been Completed

Once you have identified your receiving water(s), you will need to find out if the waterbody is impaired, and, if so, whether a total maximum daily load (TMDL) has been approved or established.

- **Water quality impairment status.** You need to determine whether your facility's receiving water is listed by your State as impaired and/or has an approved or established Total Maximum Daily Load (TMDL). EPA's Water Locator Tool (available at www.epa.gov/npdes/stormwater/msgp) will help find impaired waters within a 10 mile radius of your facility. Another place to check is EPA's website on Water Quality Assessment and TMDL information (www.epa.gov/waters/ir) or you can also contact your State water agency (cfpub2.epa.gov/npdes/contacts.cfm?program_id=6&type=STATE).

"Impaired waters" are streams, rivers, and lakes that do not currently meet their applicable designated uses and water quality standards. States, territories, and authorized tribes are required under the Clean Water Act to compile lists of known impaired waters, called 303(d) lists. Stormwater discharges to impaired waters may trigger additional control measures and monitoring requirements. For facilities subject to EPA's 2008 MSGP, see Part 2.2 for a more detailed discussion of water quality-based effluent limitations and conditions for discharging to impaired waters.

If your receiving water is impaired, use EPA's Water Locator Tool or Water Quality Assessment and TMDL website, or a State agency to help you determine:

- For what pollutant(s) is the water impaired? Make a separate list of all pollutants that have caused your waterbody to be impaired.

- Has an approved TMDL been completed for each of the pollutants? Some TMDL documents include information suggesting the type of monitoring that should be conducted to improve the understanding of the impairment or to demonstrate achievement of applicable wasteload allocations (WLAs).

C. Determine What Monitoring Requirements Apply

Having determined the pollutants that cause the impairment, you should now consult your permit to determine the type of monitoring that must be conducted, the frequency of monitoring, and whether any exceptions apply to certain pollutants. As discussed in Section 2.3 above, this must all be documented in your SWPPP so that it is clear which requirements apply to which outfall.

The 2008 MSGP lists several exceptions to and clarifications of the requirement to monitor for each impairment pollutant. In Part 6.2.4.1 of the 2008 MSGP, the permit clarifies that no monitoring is required when a waterbody's biological communities are impaired but no pollutant is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modification, impaired hydrology, or temperature. The permit also clarifies that monitoring is only required for pollutants for which a standard analytical method exists as defined in 40 CFR Part 136. In addition, certain exceptions exist that enable the permittee to be excused from sampling after the first year if it is found either that:

- The pollutant for which the waterbody is impaired is not detected above natural background levels in the discharge, and it is documented that the pollutant is not expected to be present above natural background discharges; or

- The pollutant for which the waterbody is impaired is not present and not expected to be present in the discharge.

Both the parameters that must be sampled and the frequency of monitoring for impairment pollutants may be subject to State- or Indian Country land-specific requirements. Therefore, each 2008 MSGP permittee must also consult Part 9 of the permit when determining which impaired waters sampling requirements apply.

2.5 What Type of Storm Events Qualify for Monitoring

In addition to understanding which monitoring requirements apply and where, it is also critical to develop an understanding of what type of discharge event you will be sampling. Under the 2008 MSGP, two preconditions must be met before a storm or snowmelt event is considered adequate to be monitored (see Part 6.1.3 of the 2008 MSGP).

- The storm / snowmelt event must create an actual discharge from your site ("measurable storm event"). This storm event will vary based on numerous factors at your site, the most obvious being the actual size and duration of the storm event. However, the amount of impervious surface at your facility will impact this as well. If your facility is covered mostly by grass or another type of vegetation with only a small amount of paved surfaces or roofs, it will take a larger storm to create a discharge from your site than it would at a facility that is entirely paved. Another factor affecting whether and how frequently you have a measurable storm event will be how frequently rain occurs at your facility and the size of the most recent storms. Saturated soil will generate a stormwater discharge more quickly than dry soil; however, VERY dry soil can also become compacted and become nearly impervious to rain, thereby converting precipitation to runoff quickly as well. You will need to pay attention to your facility's particular characteristics to develop an understanding of what type of rain events or snowmelt results in a discharge.

- At least 72 hours must have elapsed since the previous measurable storm event (unless you are able to document that less than a 72-hour interval is representative for local storm events during the sampling period, or if you are monitoring snowmelt consistent with Part 4.2.1 [quarterly visual assessments] or Part 6.2.1 [benchmark monitoring] of the 2008 MSGP).

In order to properly characterize rain events at your facility, it is a good idea to begin by documenting each event as part of your facility's routine maintenance activities. You can purchase a simple rain gauge and keep a notebook handy in order to document the dates on which rain occurred and the amount of rain that fell. You should also consider documenting whether or not an actual discharge from your facility occurred for each rain event. Tracking rainfall amounts and discharge information will help you to better predict which storm events will be measureable and result in a discharge.

In order to be prepared to take advantage of storms that will result in a "measurable storm event":

- Be familiar with local precipitation trends, storm patterns, and seasonal variations.

- Check weather forecasts so you can prepare to sample upcoming precipitation events.

- In addition to your local television news and the Weather Channel, you can get weather information online from http://www.wrh.noaa.gov (National Weather Service) and http://www.weather.com.

Note: You should try to collect both benchmark samples and visual monitoring samples concurrently so you can compare visual observations with the laboratory results, and reduce your field activities burden.

What To Do If You Are Unable To Sample – EPA acknowledges there may be times you are unable to complete required monitoring. The following are guidelines on how you should deal with such times.

- *Areas with Intermittent Stormwater Runoff* **–** If your facility experiences limited rainfall for extended periods of the year (i.e., in arid or semi-arid climates), or freezing conditions that often prevent runoff from occurring, then the quarterly monitoring events may be distributed during seasons when discharging does occur. If you are unable to collect four samples in one year because of insufficient runoff, document this fact in your SWPPP and continue quarterly monitoring until you have collected four samples.

- *Snowmelt Sampling* – If you are located where appreciable snow is common, one of your samples must include the capture of snowmelt discharge. If, however, you experience prolonged subfreezing temperatures, you may only be able to acquire a sample once over two quarters. You will then have to complete the monitoring requirements as above.

- *Adverse Weather Conditions* **–** When adverse weather prevents sampling per your monitoring schedule, you must sample during the next qualifying storm event. Adverse conditions are those that are dangerous or create inaccessibility for personnel, caused by such things as flooding, high winds, electrical storms or situations that otherwise make sampling impractical (e.g., drought or extended frozen conditions).

2.6 Select the Monitoring Team

Identify the members of your facility's pollution prevention team (which you identified in your SWPPP) who will collect samples and conduct visual assessments of discharges. To be considered as a member of the monitoring team, applicable staff must be familiar with the SWPPP, especially the site plan, the layout of the facility, potential pollutant sources, and the monitoring and reporting program. They also need to possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at your facility, and be able to evaluate the effectiveness of control measures. Typically, monitoring staff are based near the site to enable them to be available on short notice to sample storm events.

Ideally, the pollution prevention team consists of at least one individual from each shift so that a team member is always present during normal operating hours.

It is also important that monitoring staff understand and follow all quality assurance quality control (QAQC) techniques and procedures to ensure that the data is good. You should discuss these techniques with your laboratory prior to taking samples and properly train all sampling staff.

2.7 Select a Laboratory to Analyze the Samples

Your stormwater samples will need to be analyzed for the parameters you identified in section 2.3 by a qualified laboratory. Labs must use the approved methodologies found at 40 CFR Part 136 and return a report with chemical concentrations including data quality assurance information.

EPA recommends that you select a laboratory that is a participant in the EPA's Discharge Monitoring Report - Quality Assurance (DMRQA) Program, and, if possible, be approved by the National Environmental Laboratory Accreditation Program (NELAP). NOTE: for ELG compliance monitoring, participation in DMRQA is a minimum requirement.

Things to discuss with the laboratory

- What type and size of bottle will be provided for each test?
- How full do I fill the bottle?
- Are there any safety concerns with materials provided by the lab?
- What is the best way to preserve the samples?
- What kind of labels will be supplied and how should I fill them out?
- Will the lab deliver the supplies or do I need to pick them up?
- What are the maximum holding times for each water quality parameter to be sampled?
- Will the lab provide pH paper? Samples need to be tested for pH within 15 minutes of collection to be valid, typically in the field.
- Will the lab pick up the samples from my facility or do I need to deliver them?
- Can you walk me through filling out the chain-of-custody forms?
- Is the quantitation limit for each parameter less than the benchmark or effluent limitation concentration?*

* The quantitation limit is the minimum concentration of a parameter that the lab can accurately report using a particular method.

- A comprehensive list of NELAP-approved laboratories can be found at www.nelac-institute.org/accred-labs.php

- To ensure your chosen laboratory is eligible and reliable, you may want to request documentation showing they are certified to analyze environmental samples, and evidence they participate in DMRQA or other performance evaluation testing results.

You should ask the laboratory about any additional services and products they offer. Such as:

- pre-labeled bottles and pre-printed chain-of-custody forms;

- training on sample collection, documentation and data interpretation;

- sampling and courier services; and

- complete sampling kits which include bottles, packing materials, bottle labels, coolers and chain-of-custody forms; many laboratories provide free sampling kits.

2.8 Document Monitoring Procedures in Your SWPPP

Ensure your monitoring procedures are correctly documented in your SWPPP (see 2008 MSGP Part 5.1.5.2). The required information includes:

- The monitoring requirements that specifically apply to your facility.
- Information related to the substantially identical outfall exception, if you will use it.
- Your sampling procedures.
- Your procedures for performing quarterly visual assessments of stormwater discharges. This SWPPP element includes the routine facility inspections and comprehensive site inspections required by the 2008 MSGP (see 2008 MSGP Part 4.1 and 4.3, respectively).

Figure 1 is an example of a completed MSGP Industrial Stormwater/Snowmelt Monitoring Summary Form. You should fill out this form (Appendix A) with the sampling locations and monitoring requirements that apply to your facility and include a copy in your SWPPP.

Benchmark Levels and ELGs					
Industry Sector	Pollutant	Benchmark Level	ELG		
			Daily Max	Monthly Average	Instant Min/Max
D	TSS	100	23	15	
D	Oil and Grease		15	10	
D	pH				6 - 9
E2	Iron	1			
E2	TSS	100	50		
E2	pH				6 - 9

Sample Summary								
Outfall Identifier	Industry Sector (SIC)	Basis	Frequency	Timing	Total Suspended Solids (SM 2540D)	pH	Oil and Grease (EPA Method 1664A)	Iron (EPA Method 200.9)
e.g. 001-A	Sector D (SIC 2951)	Benchmark	1/Quarter	1st wk of month	✓	✓	✓	
e.g. 001-A	Sector D (SIC 2951)	ELG	1/year	January	✓			
e.g. 001-B	Subsector E2 (SIC 3271)	Benchmark	1/Quarter	1st wk of month	✓			✓
e.g. 001-B	Subsector E2 (SIC 3271)	ELG	1/Year	January	✓	✓		

Figure 1. Example MSGP Industrial Stormwater/Snowmelt Monitoring Summary Form with monitoring requirements, sampling locations and industry sectors.

3. Conduct Monitoring

This section describes sampling preparation, choosing the right storm event to monitor, how to collect stormwater samples, how to conduct quarterly visual assessments, quality control considerations, and how to report the results.

The information contained in this section is not specific to monitoring for the 2008 MSGP or any particular general industrial permit.

3.1 What to Have In Place Prior to Collecting Stormwater Samples

Preparation is essential, especially if you are in a climate where measureable storm events are infrequent.

- ***In-Office Preparations*** – Your in-office preparations should include the following:
    - Contacting the lab well ahead of time so that you have the sample bottles before a measurable storm event.
    - Paying attention to weather forecasts so that you are tracking patterns that are likely to result in a measurable storm event.
    - Knowing who your monitoring personnel are and how to contact them when a measurable storm event is expected.
    - Having sampling gear assembled and checked for readiness.
    - Preparing sample bottle labels using waterproof ink with the following information (if not already done by the lab):
        - Facility name and address
        - Sample location identifier (e.g., Outfall 001)
        - Name or initials of sampling personnel
        - Parameter and associated analytical method (e.g., TSS, Method # 0160.2; consult with your contract laboratory for analytical method numbers)
        - Sample type (generally will be “grab” samples)
        - Sample preservation notes
        - Date and time after completing sampling event
    - Having chain-of-custody forms ready for use.

The chain of custody form is a document that travels with the sample from collection through analysis. Each individual that handles the sample will place their name, date, and time on the chain-of-custody form. The form is used to maintain the integrity of the sample by providing documentation of the control, transfer, and analysis of samples (see Section 3.4 below for a more detailed discussion of chain-of-custody).

- ***Sampling Supplies*** – Collect the following supplies and keep them ready for quick use:

  - Clean, sterilized sample bottles, sized appropriately for the parameter to be analyzed (many labs provide the appropriate bottles or will tell you what size to get). Glass must be used for oil and grease samples; plastic containers can be used for other parameters. Use Teflon or aluminum-lined caps.

    For rinsing sample bottles, use only distilled water

  - If bottles are new but not pre-cleaned, they must be pre-conditioned before use by filling with water for several days (the duration can be reduced by using a dilute solution of hydrochloric acid).

  - Additional glass or clear plastic bottles suitable for visual assessments.

  - Visual monitoring forms (see example in Appendix B).

  - Clipboard and site-specific monitoring checklist.

  - If needed, a pole (sold at field supply stores) on which to attach sample bottles and attachment clips or strapping tape to secure the bottle to the pole.

  - Safety equipment, including first aid kit.

  - Hand sanitizer solution.

  - Carrying case for sampling equipment or backpack for carrying equipment to remote locations.

  - Powder-free disposable nitrile or latex gloves (sold by medical and laboratory suppliers or may be provided by your contract laboratory). Do *not* use powdered gloves as they may contaminate your samples.

  - Indelible pens / markers that can write on wet surfaces.

  - Foul-weather gear including footwear appropriate for the conditions at your sampling locations (e.g., non-slip boots).

  - Sturdy cooler and ice or ice packs for stowing and preserving your samples en route to the lab (the lab may provide an appropriate container).

  - Field notebook or field forms for your sampling records (waterproof notebooks are available at office supply stores).

  - pH paper and appropriate chemical preservatives for adding to sample bottles (obtain from your laboratory).

Preparing sampling supplies.

- ***Optional or as-needed supplies:***
    - Sodium bicarbonate (for safety reasons if using acid preservative additives)
    - A graduated stick to measure water depth for determining safe / wade-able sampling access locations (if a sampling pole will be used, you can modify it with depth markings)
    - Mosquito repellent
    - Flashlight in case of sudden loss of light or darkness under storm conditions
    - Flagging tape for marking access to remote or overgrown locations
    - Camera, used for:
        - Recording evidence of potential pollutants or sampling conditions.
        - Especially useful if different people will do the sampling throughout the permit term.
        - Pictures of sample appearance along with the visual inspection records can help “normalize” visual assessments.
        - Pictures of the sampling location can help you find the same spot for subsequent sampling events.

Develop a stormwater sampling checklist to ensure consistency and continuity across sampling events. Since stormwater sampling is not a regular part of a facility's workload, a checklist of things to have prepared before sampling, sampling activities, and sampling locations will help you remember from quarter to quarter. You can make the checklist by noting the things you did for the first sampling event to remember for future sampling events. Keep the checklist updated as you gain experience with sampling.

3.2 Collect Stormwater Samples

Contact the lab prior to collecting stormwater samples so they know to expect the samples and have adequate staff available to conduct the analyses within the applicable holding times (the lab may offer courier service). Inform them of the pollutant parameters for which your samples will be analyzed.

A stormwater grab sample is collected directly into the sample container.

Follow the protocol below to obtain an accurate grab or manual sample. A grab sample is a single sample "grabbed" by filling up a container, either by hand or attached to a pole. Obtaining accurate data is vital to your ability to assess how your stormwater control measures are performing.

- Wear disposable powder-free gloves for sampling; never touch the inside of the lid or bottle.
- For oil and grease: fill the glass sample bottle directly from the discharge; never collect in a container first and then transfer to the sample bottle because oily residue will collect along the inside of the first collection bottle and make the sample inaccurate.

Remember, oil and grease must be collected directly into the glass sample bottle.

- If you have problems accessing the stormwater discharge point (e.g., access is too far or dangerous), use a pole or other appropriate sampling apparatus.

- Sample only stormwater discharging from your facility (i.e., do not sample from puddles, ponds or retention basins).

- Sample from a turbulent section in the central part of the flow; avoid touching the bottom or sides of the stormwater conveyance.

- Fill the sample bottle nearly to the top (meniscus almost at the rim) by holding the opening into the flow of water; do not rinse or overfill the bottles.

Sample bottles labeled with location, date, time, sample collector, analysis, and preservative type.

While stormwater samples are typically grab samples, in some situations the use of an automatic sampler may be appropriate. Automatic samplers are mechanical devices that monitor site conditions and collect a sample when needed. The automatic sampler can be set up well in advance of a storm, or set up as a permanent installation, and the technician can retrieve the sample after the storm when conditions are favorable. Advantages of automatic samplers include low labor costs, convenience, and safety – personnel are not out in the storm trying to collect one or more samples. The major disadvantage is cost; automatic samplers are expensive. Secondarily, the automatic sampler cannot collect visual observations, and they cannot be used for collection of certain measurements.

After the samples have been collected:

- Place the samples in a sturdy cooler partially filled with ice. As a general rule, samples should be kept at approximately 39°F (4°C) until the cooler is delivered to the lab.

- Put a completed chain-of-custody form enclosed in a re-sealable plastic bag inside the cooler. If you have several

pH has a 15 minute holding time; therefore, the sample must be analyzed within 15 minutes of collection.

coolers complete a separate chain of custody form for each cooler.

- Deliver the samples to the lab (e.g. drive, arrange same-day pick-up by the lab, or use an express / overnight service) as soon as possible, bearing in mind the holding times for each parameter sampled.

Stormwater samples packed for delivery to the lab, note the chain of custody forms attached to the lid.

3.3 Record Information for Each Monitoring Event

For each individual sample collected, you should note the following information:

- The sample / outfall identifier.
- The duration between the storm event you sampled and the end of the previous storm event that resulted in a discharge of stormwater from your site (i.e., a “measurable storm event”).
- The date and duration of the storm event sampled.
- Rainfall measurement or estimate (in inches).
- Estimate of the total volume of the discharge sampled from the outfall.

You should record this information on a Stormwater Collection Form (see appendix C for an example).

3.4 Quality Assurance Considerations

The following actions must be followed explicitly. Quality assurance (QA) helps maintain the accuracy and integrity / legal defensibility of your monitoring results by documenting the stewardship of your samples, by minimizing biases in sampling and lab procedures, and by helping to assess the accuracy and precision of the lab's analyses.

Holding Times and Sample Preservation

Samples that cannot be delivered to the lab on the same day may need to be preserved, often by cooling to 4°C (i.e., in an ice bath) and/or with added chemical preservatives (laboratory-supplied bottles may already include preservatives). If your samples need to be analyzed for more than one parameter you may need to bottle more than one sample at an outfall using different preservatives. In addition, you should be aware of the maximum holding time allowed for a particular parameter before which the sample must be analyzed. Following is a table with typical preservation and holding requirements for benchmark parameters and additional potential pollutants of concern (the latter will not have a numeric value in parentheses). Work with your laboratory service providers to develop a list of containers to optimize "sharing" of containers across different parameters. Not all laboratories provide the same container types for the different parameters. Laboratories frequently provide pre-completed custody records and seals, and will provide pre-labeled sample bottles for ease of use in the field as part of their routine "value-added" services. Pre-completed custody records and labels require only time, date, and samplers' initials in order to complete this critical documentation. Your laboratory may also have additional sampling, sample handling, or shipping instructions helpful to your sample collection personnel. NOTE: Whenever possible, minimize the amount of lead time sample containers / kits are outside of the laboratory. Extended storage of pre-preserved containers for some analytes may present opportunity for blank contamination, even under ideal storage conditions.

Table 5. Sample Preservation and Hold Times

Parameter (Benchmark Level, mg/l or as specified)	Preservation		Maximum Holding Time	Sample Container
	Cool to 4º C?	Additional		
Aluminum, Total Recoverable (0.75)	N	HNO_3 (nitric acid) to pH <2	6 months	500 mL HDPE
Ammonia (2.14)	Y	H_2SO_4 (sulfuric acid) to pH <2	28 days	500 mL HDPE
Antimony, Total Recoverable (0.64)	N	HNO_3 to pH <2	6 months	500 mL HDPE
Arsenic, Total Recoverable (0.15)	N	HNO_3 to pH <2	6 months	500 mL HDPE
Beryllium, Total Recoverable (0.13)	N	HNO_3 to pH <2	6 months	500 mL HDPE
Biological Oxygen Demand, BOD_5 (30)	Y	None	48 hours	1L HDPE or glass
Cadmium, Total Recoverable (0.0005 – 0.0053)*	N	HNO_3 to pH <2	6 months	500 mL HDPE
Chemical Oxygen Demand, COD (120.0)	Y	H_2SO_4 to pH <2	28 days	100 mL HDPE or glass
Chromium (0.58 – 3.82)*	N	HNO_3 to pH <2	6 months	500 mL HDPE

Parameter (Benchmark Level, mg/l or as specified)	Preservation		Maximum Holding Time	Sample Container
	Cool to 4º C?	Additional		
Copper, Total Recoverable (0.0038 – 0.0332)*	N	HNO_3 to pH <2	6 months	500 mL HDPE
Cyanide, Total (0.022)	Y	NaOH (sodium hydroxide) to pH >12, refrigerate in dark	14 days; 24 hours if sulfide present	1 L HDPE
Fluoride		None	28 days	100 mL HDPE
Hardness (as CaCO3)		HNO_3 or $H_2SO_4$to pH <2 (method dependent)	6 months	100 mL HDPE
Iron, Total Recoverable (1.0)	N	HNO_3 to pH <2	6 months	500 mL HDPE
Lead, Total Recoverable (0.014 – 0.262)*	N	HNO_3 to pH <2	6 months	500 mL HDPE
Magnesium, Total Recoverable (0.064)	N	HNO_3 to pH <2	6 months	500 mL HDPE
Mercury, Total Recoverable (0.0014)	N	HNO_3 to pH <2	28 days	500 mL HDPE
Nickel, Total Recoverable (0.15 – 1.02)*	N	HNO_3 to pH <2	6 months	500 mL HDPE
Nitrate + Nitrite Nitrogen (0.68)	Y	H_2SO_4 to pH <2	28 days	200 mL HDPE
Oil and Grease	Y	HCl or H_2SO_4 to pH <2	28 days	1L Boston round glass
pH (6.0 – 9.0 s.u.)	N	None	15 min (Field test)	50 mL
Phenols, Total Recoverable	Y	H_2SO_4 to pH <2	28 days	500 mL HDPE
Phosphorous, Total (2.0)	Y	H_2SO_4 to pH <2	28 days	500 mL HDPE
Radium, Total Recoverable		HNO_3 to pH <2	6 months	1L HDPE
Radium, dissolved		Field-filtered HNO_3 to pH <2; if not field filtered - none	Field filtered, preserved 6months; if not field filtered, filter on receipt, preserve to pH <2 6 months	1L HDPE
Selenium, Total Recoverable (0.005)	N	HNO_3 to pH <2	6 months	500 mL HDPE
Silver, Total Recoverable (0.0007 – 0.0183)*	N	HNO_3 to pH <2	6 months	500 mL HDPE
Total Suspended Solids, TSS (100)	Y	None	7 days	200 mL HDPE
Turbidity (50 NTU)	Y	store in the dark	48 hrs	100 mL HDPE
Uranium		HNO_3 to pH <2	6 months	500mL HDPE
Zinc, Total Recoverable (0.04 – 0.26)*	N	HNO_3 to pH <2	6 months	500 mL HDPE
Landfill Parameters				
Alpha Terpineol	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Aniline	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Benzoic Acid	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Napthalene	Y	NA	7 days to extraction	1L Amber glass

Parameter (Benchmark Level, mg/l or as specified)	Preservation		Maximum Holding Time	Sample Container
	Cool to 4º C?	Additional		
			40 days to analysis	
p-Cresol	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass
Pyridine	Y	NA	7 days to extraction 40 days to analysis	1L Amber glass

*These values are hardness dependent.

Field Blanks

Field blanks are distilled or de-ionized water samples prepared when you are collecting stormwater samples. Field blanks are prepared, in the field, after cleaning the sampling equipment but before collection of water quality samples. Blanks are prepared by pouring distilled de-ionized water into each scoop, dipper, etc. used for sample collection and then into sample bottles as if they were actual field samples. The field blanks are processed and analyzed in an identical manner as the stormwater samples. If the lab detects any contamination in the blanks, your sampling results could be considered tainted (either from contamination or errors in sampling or analysis). Collection and analysis of field blanks is not required by the 2008 MSGP; however, field blanks are used for quality control to assess whether contamination was introduced during sampling, and may prove useful in interpretation of results.

Chain of Custody Forms and Procedures

Samples must be traceable from the point of collection until the sampling results are reported. To do this, document who is in possession of the samples using the chain of custody procedures below. One person should be responsible for the care and custody of the samples, and for generating the chain of custody record until the samples are properly transferred or relinquished to the laboratory. Chain of custody tasks include:

- Ensure that the sample labels are properly filled in.
- Complete the chain of custody form with the date, time, parameter and sample locations for each sample, and sign the form.
- During the transfer of custody of the samples, both the persons relinquishing and receiving the cooler (including lab personnel) must record the date and time on the chain of custody form and sign it.
- Record the shipping method, courier name(s), and other pertinent information as remarks on the chain of custody form.
- The original chain of custody form remains with the samples and a copy must be provided to the facility for inclusion in project records.

Chain of custody records are critical to ensure that no tampering occurs between sample collection and analysis. Your analytical service provider may provide training or written instructions to assist in your completion of accurate custody records. This is another key area where many laboratories invite the opportunity to work with their clients as part of their value-added services.

3.5 Conducting Visual Assessments of Stormwater Discharges

All facilities covered by the 2008 MSGP must perform quarterly visual assessments, irrespective of benchmark monitoring.

Visually inspecting stormwater samples from a measurable discharge at your sampling outfalls is an inexpensive way of assessing the performance of your control measures. The sample should be collected and analyzed in a colorless glass or plastic bottle. It is recommended that you take photographs of the discharges at the time of observation in case more than one person is doing the assessments and because photos can be helpful in determining the effectiveness of your control measures and any need to make changes to control measures.

Assess the general appearance, as an indicator of contaminants, of your discharges for these characteristics:

- ***Color*** – If the discharge has an unusual color, such as reddish, brown, or yellow hue, this may indicate pollutants or suspended sediment.

- ***Odor*** – If the discharge has a noticeable odor, for instance if it smells like gasoline fumes, rotten eggs, raw sewage, or solvents odor, or has a sour smell, this could be indicative of pollutants in the discharge.

- ***Clarity*** – If the discharge is not clear, but is instead cloudy or opaque, this could indicate elevated levels of pollutants in the discharge.

- ***Floating solids*** – If you observe materials floating at or near the top of the bottle, take note of what the materials appear to be.

- ***Settled solids*** – You should wait about a half hour after collection, then note the type and size of materials that are settled at the bottom of the bottle.

- ***Suspended solids*** – Particles suspended in the water will affect its clarity, and color and could be attributable to pollutant sources at your facility.

- ***Oil sheen*** – You should check the surface of the water for a rainbow color or sheen; this would indicate the presence of oil or other hydrocarbons in the discharge.

- ***Foam*** – You should gently shake the bottle and note whether there is any foam.

- ***Other obvious indicators of stormwater pollution.***

To record your visual monitoring results you can use the optional “Quarterly Visual Monitoring Form” in Appendix B (or a comparable one of your own).

4. Evaluate Monitoring Results

The primary purpose of any industrial stormwater monitoring program, consisting of analytic chemical monitoring and visual assessments, is to provide feedback on the performance of your selection and implementation of control measures. Visual evidence of pollution in a stormwater sample, a spike in the concentration of a benchmark pollutant, or the exceedance of a numeric effluent limitation provides an indicator that modifications or additions to the site's control measures need to be considered to improve the effectiveness of your stormwater program.

The following will aid you in interpreting your monitoring results and revising your control measures, if necessary.

4.1 Evaluating Quarterly Visual Assessment Results

For anything but colorless and odorless stormwater in your discharge, you should investigate what area of your site or what specific pollutant sources are contributing to the contamination of your site's runoff. To search for the source of pollutants, you should move upstream from the discharge point. You should scrutinize your exposed industrial materials and activities (material handling equipment, industrial machinery, raw materials, finished product, wastes, or products that are stored, used or created onsite, etc.). Examine where material handling activities occur, such as: storage, loading and unloading, and material transporting. Be aware, the source could be from an ongoing activity or the result of a spill or other infrequent occurrence. In looking at your samples, consider the following:

- When there is a distinct color or odor, are the abnormalities associated with any raw materials, chemicals or other materials used at the site?

- Muddiness or sediment may have been picked up from areas where there is disturbed earth or other unpaved areas lacking adequate control measures.

- Foam or oil sheen may be the result of a leak or spill of materials.

- Cloudiness indicates suspended solids such as dust, ash, powdered chemicals, and ground up materials. Determine whether you use any of these materials and whether they are exposed to stormwater.

Clean up all sources of potential contamination, make changes to your control measures, and update your SWPPP, as necessary.

4.2 Evaluating Benchmark Monitoring Results

The analysis of your benchmark monitoring results can yield valuable information about the characteristics of your runoff and how well your control measures are working. Once you have received your lab results for your benchmark samples, compare these concentrations to the benchmark values that apply to your facility. The 2008 MSGP requires that you conduct four benchmark samples in your first year, and then compare the average value to the applicable benchmark. If the average concentration of your samples exceeds the benchmark, then you are required under the permit to evaluate whether changes to your control measures are necessary. See Parts 6.2.1.2 and 3.2. However, prior to the completion of the four samples, if one or more sample results makes an exceedance of the benchmark mathematically certain, you are required to conduct this evaluation without waiting for the results of the remaining benchmark samples.

Table 6 will help you decide a course of action depending on the results of your benchmark samples.

Table 6. Evaluation of Benchmark Monitoring Results

Does the average of your four quarterly benchmark samples for any pollutant exceed the applicable benchmark concentration? OR If you have not yet completed your four quarterly benchmark samples, does the total value of your samples already make an exceedance of the benchmark mathematically certain (e.g., the sum of the concentration of your samples exceeds four times (4X) the benchmark concentration)?	
YES	**NO**
You must evaluate whether modifications to the stormwater control measures used at your site are necessary. You will need to consider whether there is a problem in the selection, design, installation, and/or operation of applicable control measures. Follow the evaluation and corrective action process in Parts 3.2, 3.3, and 3.4. An exceedance of a benchmark does not necessarily mean that your control measures are insufficient. Continue reading below for additional items to consider as you proceed.	Sample results below benchmark limits provide an indication that your control measures are working as intended to minimize the discharge of pollutants. Although your samples indicate properly functioning control measures, you should continue to note changes to your site that may affect the quality of stormwater runoff, and to link such changes to your future monitoring results. You are still required to meet all requirements in the permit affecting the implementation and maintenance of your control measures, despite the good results of your benchmark monitoring.

If benchmarks were exceeded:

- Did you sample correctly?
    - Did you start with clean sample collection jars and were the samples preserved and submitted to the lab within the allotted time frame?
    - Did you properly sample the discharge flowing from the site or did you collect the sample from a low spot or stagnant pool?

- Was anything atypical going on at the site prior to or during the storm? Atypical activities could include:

  - A leak or spill that was not adequately cleaned up.
  - Construction, painting and paving activities.
  - Having a large amount of material (raw materials, wastes or products) recently delivered or being prepared for shipment.

- Did you observe anything during visual inspections that may have indicated that stormwater runoff would have been exposed to pollutants? If so, are control measures in place to address the pollutant sources?

The more the benchmark was exceeded, the greater your facility's problems may be, necessitating a more robust response. For example, if your results for TSS were over the benchmark value by a relatively small amount (e.g., TSS values of 110 to 150 mg/L, compared to the 100 mg/l benchmark level assigned to TSS), then simply performing additional housekeeping measures (e.g., frequent sweeping) may reduce the values below the benchmark of 100 mg/l by the next storm. However, an exceedance above 150 mg/l may warrant new or supplementary control measures (assuming your control measures are performing as designed) that more effectively reduce the potential for sediment in discharges (e.g., installing storm inlet filters, seeding / stabilizing disturbed areas, implementing dust and debris controlling procedures). TSS values exceeding benchmarks by orders of magnitude indicate a serious problem, and may require structural control measures (e.g., paving, installing berms around piles of loose material, placing operations under cover, placing grassy swales or basins in the discharge flow path to trap sediment).

Until your visual observations and sampling results show that pollutants are not found in your discharges or are present in concentrations below benchmark values, the pollution prevention team should engage in an iterative process in which control measures are selected, implemented, evaluated and modified until determined to be completely effective.

There may be circumstances where benchmark values cannot be reasonably achieved because of local natural background concentrations (see 2008 MSGP Part 6.2.1.2). In such cases, EPA allows for benchmark exceedances. For example, high natural background levels of iron in soils or groundwater could cause exceedances of a benchmark value. This provision exempts facilities from further control measure evaluation and benchmark monitoring when natural background levels are solely responsible for the exceedance of a benchmark value.

To make this determination, natural background pollutant concentrations must be greater than the corresponding benchmark value, and there is *no* net facility contribution of the pollutant (i.e., average concentration detected in runoff from all monitored outfalls over four separate events minus the average natural concentration of the parameter for four separate events does not exceed zero).

For example, if the natural background concentration of TSS from an undisturbed watershed is 200 mg/L, an exemption from further benchmark monitoring / control measure evaluation is available if the average of your four benchmark samples is equal to or lower than 200 mg/L. There are additional requisites for claiming a natural background level exemption, including documentation. Details of these are contained in the 2008 MSGP in Part 6.2.1.2 and the Fact Sheet.

4.3 Effluent Limitation Guideline Monitoring Results

What happens if your facility is subject to numeric effluent limits (for ELG compliance monitoring) and your stormwater sample exceeds the effluent limits for one or more parameters? Within 24 hours of receiving the lab report you must prepare a corrective action report, including:

- Identification of the condition triggering the need for corrective action review;
- Description of the problem identified; and
- Date the problem was identified.

Within 14 days of receiving the lab report, you must document the following information:

- Summary of corrective action(s) taken or to be taken;
- Notice of whether any modifications to your control measures and any related changes to your SWPPP are necessary as a result of this discovery or corrective action;
- Date corrective action initiated; and
- Date corrective action completed or expected to be completed.

You must submit these reports with your annual report and retain a copy onsite with your SWPPP

The 2008 MSGP requires that you conduct follow-up monitoring within 30 calendar days of implementing corrective actions (or during the next qualifying runoff event, should none occur within 30 days, see Part 3 of the 2008 MSGP). Monitoring must be performed for any pollutant(s) that exceeded the effluent limit. If the results from the follow-up monitoring exceed the effluent limit(s), you are required to submit an Exceedance Report to EPA no later than 30 after receipt of your lab results. The exceedance report must include:

- NPDES permit tracking number;
- Facility name, physical address, and location;
- Name of receiving water;
- Monitoring data from this and the preceding monitoring event(s)

- An explanation of the situation; what you have done and intend to do (should your corrective actions not yet be complete) to correct the violation; and
- An appropriate contact name and phone number.

In addition to preparing the Exceedance Report, you must continue to monitor, at least quarterly, until your stormwater discharge is in compliance with the effluent limits or until EPA waives the requirement for additional monitoring.

4.4 Specific Pollutants and Control Measure Options

All facilities need to gear their control measures toward their specific pollutants of concern, as determined by the materials and activities onsite. Below is a brief discussion of some of the most common pollutants and control measure options.

- **Total Suspended Solids (TSS)**. Small sediment particles are easily suspended and carried by surface water flows. These particles may be blown onto the site from unpaved areas within or adjacent to your facility as well as being tracked in on the tires of vehicles. Excess particles may be self-generated, particularly in the concrete, asphalt, scrap recycling, automobile salvage, and mining sectors. See the discussion above for control measure options for controlling TSS.

- **Oil and Grease.** Often, oil and grease may be observed as a film, sheen or discoloration on the top of a discharge or receiving water. But such a surface anomaly may not be obvious, in which case detection by a lab would be the only way. This could be a pollutant of concern for any facility, especially if there are exposed vehicles or equipment. Therefore, it is vital that due diligence regarding "reportable quantity" (RQ) spills or leaks be observed. Basically, an RQ for oil is any quantity of oil that causes a film, sheen or discoloration on a receiving water surface (and for which there are separate reporting requirements to regulatory agencies). If detected you must find the source and mitigate it. Start with the vehicle / equipment maintenance and storage areas or where shipping / receiving and the like are done. Above ground storage tanks and waste storage are other likely sources.

  Available control measures range from regularly monitoring these areas and applying an absorbent material (choose a bio-based absorbent like Nature's Broom, not a clay-based material) as soon as an oil leak or spill is observed. Consider coverage of and secondary containment for storage areas where oil or grease are stored, transferred or disposed of. An oil water separator downstream of the area(s) most likely to contain oil or grease could provide enough treatment to reduce oil and grease to acceptable levels in the discharge.

- **pH**. pH values below benchmark range indicate that acidic substances are exposed to stormwater. In this case you need to determine whether any of your industrial processes use acids and if so, where. Does your facility do plating, or are lead-acid batteries used or stored on-site? If acids are being used to clean parts, for example, where are the parts stored after being treated with the acid? Where are waste acids stored and how are they disposed? Which operations could expose acids to stormwater? Coal piles are also a source of acidified runoff.

  High pH values indicate that a base or alkaline material (such as lye) is exposed to stormwater. Cement and some cleansers can produce high pH values.

  Control measures applicable to controlling pH include housekeeping (sweeping and cleaning areas where materials that affect pH could be exposed to stormwater); overhead coverage and disposal of waste materials in covered receptacles. Low or high pH runoff can be collected and neutralized by adding an appropriate agent to neutralize pH values to the 6.0 – 9.0 range. Alternatively, flow can be directed to come in contact with a neutralizing substance (e.g., acidic coal pile runoff directed to flow through a limestone channel).

- **Chemical Oxygen Demand (COD)**. COD is the amount of dissolved oxygen in water consumed by the chemical breakdown of organic and inorganic matter (i.e., COD is not a specific component in the discharge). Therefore, a high COD value indicates elevated quantities of pollutants in runoff, especially carbon. Examples of facilities that handle materials which could cause high COD levels include the wood and paper product industries. Control measures applicable to controlling COD levels are the basic stormwater ones: good housekeeping and covering materials with the potential to allow carbon or other organic materials to be carried by stormwater.

- **Metals.** Metals originate from many sources and consequently a number of industries must monitor for metals, including facilities such as wood preservative and agricultural chemical makers, mines, and foundries. Depending on a facility's activities, metals can be found in a dissolved form and/or adsorbed to particles or sediment. It is because both the dissolved and particulate forms can occur at the same time is why stormwater discharges are analyzed for "total recoverable metals." After identifying those operations that could expose stormwater to metals sources, implement control measures capable of reducing metals concentrations, including good housekeeping (sweeping and disposing of metal wastes in covered containers), covering / shielding operations, and directing run-on away from any critical outdoor areas. Ion exchange techniques can also be employed to remove dissolved metals.

5. Record-Keeping and Reporting

It is important that accurate record-keeping of monitoring activities become a standard operating procedure at your facility. You need to be able to show that monitoring and sampling events not only meet all permit requirements, but are defensible and abide by all QA/QC procedures. It is always preferable to document too much as opposed to too little when dealing with any sort of permit compliance. Create easy to use log books for keeping track of rain events. Be sure that your site map is up to date and easy to understand. Develop simple instruction sheets for recording sampling, visual assessments, or other monitoring activities. The instructions should be kept in logical locations (e.g. in sample kits, in the SWPPP notebook) and updated as needed.

When possible, use standardized forms such as those provided in the appendices of this monitoring guide to record your monitoring activities. This will provide consistency in information reported. Example forms are provided in this guide in Appendix A (2008 MSGP Industrial Stormwater Monitoring Form), Appendix B (2008 MSGP Visual Monitoring Form), and Appendix C (2008 MSGP Industrial Stormwater Collection Form).

If possible, regularly transfer sampling records and sample results into databases or spreadsheets. This will provide back-up records for hard-copy logs or forms as well as providing an easy way to analyze your sampling data.

5.1 Reporting Monitoring Data

Each state industrial stormwater permit has different requirements for how monitoring data should be reported. Facilities subject to EPA's 2008 MSGP must submit to EPA all monitoring data collected no later than 30 days after receiving complete lab results for all monitored outfalls. You must submit even if your facility is reporting "no discharge" or a change in status from "active and staffed" to "inactive and unstaffed."

Facilities must use the online eNOI system (www.epa.gov/npdes/eNOI) to report results. EPA's Electronic Notice of Intent (eNOI) system is an online electronic permit application system that enables stormwater entities to submit NOI forms to EPA. eNOI also allows registered eNOI users to report discharge monitoring data and submit annual reports and other reporting information to EPA.

If you cannot access eNOI, the paper MSGP Discharge Monitoring Report (MDMR) reporting form (available at www.epa.gov/npdes/stormwater/msgp) can be submitted to the appropriate address identified in the 2008 MSGP (Part 7.6.1).

Even if you submit monitoring data via eNOI, the paper MDMR form can help ensure you have the information you need to complete all the required fields. Rather than go line by line through the MDMR, which the instructions do, this Guide will highlight the information needed to fill out the MDMR.

You will need the following information to submit monitoring data via eNOI and complete the MDMR, at a minimum:

1. Permit tracking number
2. The facility SWPPP

3. Monitoring records
4. Lab reports
5. Corrective actions

Permit Tracking Number – The permit tracking number is a unique identifier assigned to your facility by EPA. EPA tracks report submittals using the Permit Tracking Number rather than facility name or address. Thus, if you do not include the Permit Tracking Number you may not get credit for submitting the MDMR.

Facility SWPPP – The facility SWPPP includes several pieces of information needed for the MDMR, including:

- The number of stormwater outfalls.
- Which, if any, of the outfalls discharge substantially identical effluents.
- Alternative monitoring periods, if the facility is located in an area of irregular stormwater runoff.

Monitoring Records – Detailed monitoring records will make completing the MDMR easier. As previously discussed, monitoring records must include:

- The date(s) of all monitoring events during the MDMR reporting period.
- Any stormwater outfalls that did not have a discharge during the MDMR reporting period.
- Whether the discharge resulted from rainfall or snowmelt.
- The duration of the storm event.
- The number of inches of rainfall from the monitored storm event(s).
- The number of days since the previous measurable storm event, which may or may not be the previous *monitored* measurable storm event.

Lab Reports – The lab will provide a detailed report with the results of your stormwater analyses and detailed QA/QC data to verify that the results are accurate. For each parameter the lab will typically report one of three results to be reported on the MDMR.

1. The measured concentration to be compared against the benchmark or effluent limitation guideline.
2. BQL or below quantitation limit means that the parameter is present at some amount greater than zero but less than the quantitation limit but the method used is not precise enough to give an exact concentration. Report BQL and the numeric quantitation limit on the MDMR.
3. ND or not detected means that the parameter was not detected in the sample. Report ND and the detection limit on the MDMR. Note that the ND level is typically three to five times less than the quantitation limit.

Other lab reports you may need include receiving water hardness results if any of your required parameters are hardness dependent, and data on natural background pollutant levels if you are claiming that an exceedance of a benchmark limit is due to natural background conditions.

Corrective Actions – The 2008 MSGP requires you to implement corrective actions if the lab report indicates an exceedance of one or more numeric effluent limits or if the average of four quarterly samples exceeds the applicable benchmark. You must document discovery of effluent limit(s) or

benchmark concentration(s) exceedances within 24 hours of receiving the lab report, including the condition triggering the need for corrective action review; a description of the problem; and the date the problem was identified. Within 14-days of receiving the lab report you must summarize the corrective action that was taken or will be taken, including a description of the corrective action; start and end dates; and whether the SWPPP will be modified. You can submit the corrective action report(s) via eNOI or along with the paper MDMR form.

6. Train Personnel

You must train your stormwater pollution prevention team in the proper procedures for sample collection, visual assessments, tracking and reporting. Trainings should be held regularly to update staff on any permit or SWPPP changes. New employees that become members of the stormwater pollution prevention team should be trained in general stormwater awareness as well as the following monitoring-specific topics:

- How to anticipate a measurable storm event.
- Where to monitor.
- How to collect and document the collection of stormwater samples including the assembling of "field blank" samples.
- How to perform and document visual assessments.
- How to handle and send the samples to the lab.
- How to interpret the results.
- How to keep accurate and complete records and report appropriate information to the permitting authority.

7. References

APHA (American Public Health Association). 1998. *Standard Methods for the Examination of Water and Wastewater, 20th Edition*. American Public Health Association, 20th Edition.

Ecology. 2002. *How To Do Stormwater Sampling: A Guide for Industrial Facilities*. Publication #02-10-071. State of Washington Department of Ecology, Olympia, Washington.

"EPA Administered Permit Programs: The National Pollutant Discharge Elimination System." *Code of Federal Regulations* Title 40, Pt. 122.

"Guidelines Establishing Test Procedures for the Analysis of Pollutants." *Code of Federal Regulations* Title 40, Pt. 136.

USEPA (U.S. Environmental Protection Agency). 1992. *NPDES Storm Water Sampling Guidance Document*. EPA 833-8-92-001. U.S. Environmental Protection Agency, Office of Water, Washington D.C.

USEPA (U.S. Environmental Protection Agency). 2008. *NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)*. U.S. Environmental Protection Agency, Washington D.C.

Appendix A – 2008 MSGP Industrial Stormwater Monitoring Form

MSGP Industrial Stormwater/Snowmelt Monitoring Summary Form

Name of Facility:

Address:

Permit Tracking Number:

Pollutants to sample (Method)

Benchmark Levels and ELGs

Industry Sector	Pollutant	Benchmark Level	ELG		
			Daily Max	Monthly Average	Instant Min/Max

Sample Summary

Outfall Identifier	Industry Sector (SIC)	Basis	Frequency	Timing

Appendix B – 2008 MSGP Visual Monitoring Form

MSGP Quarterly Visual Assessment Form

(Complete a separate form for each outfall you assess)

Name of Facility:		Permit No.:		
Street Address:		City:	State:	Zip Code:
Outfall Number:	"Substantially Identical Outfall"? □ No □ Yes (identify substantially identical outfalls):_____			
Quarter/Year:	Substitute Sample?: □ No □ Yes (identify quarter/year when sample was originally scheduled to be collected):			
Person(s)/Title(s) collecting sample:				
Person(s)/Title(s) examining sample:				
Date & Time Storm or Snowmelt Began:	Date & Time Sample Collected: _____	Date & Time Sample Examined: _____		
Nature of Discharge: □ Rainfall □ Snowmelt				
Rainfall Amount: inches	Previous Storm Ended > 72 hours Before Start of This Storm? □ Yes □ No* (explain):			
Parameter				
Color	□ None □ Other (describe):			
Odor	□ None □ Musty □ Sewage □ Sulfur □ Sour □ Petroleum/Gas □ Solvents □ Other (describe):			
Clarity	□ Clear □ Slightly Cloudy □ Cloudy □ Opaque □ Other (describe): _____			
Floating Solids	□ No □ Yes (describe):			
Settled Solids**	□ No □ Yes (describe):			
Suspended Solids	□ No □ Yes (describe):			
Oil Sheen	□ None □ Flecks □ Globs □ Sheen □ Slick □ Other (describe): _____			
Foam (gently shake sample)	□ No □ Yes (describe):			
Other Obvious Indicators of Storm Water Pollution	□ No □ Yes (describe): _____			

* The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

** Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Sampling not performed due to adverse conditions: □ No □ Yes (explain): _____

_____

Sampling not performed due to no measurable storm event occurring that resulted in a discharge during the monitoring quarter:
□ No □ Yes (explain): _____

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions taken below (attach additional sheets as necessary).

Certification by Facility Responsible Official (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

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 gathered and evaluated 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.

A. Name _____ B. Title _____

C. Signature_____ D. Date Signed_____

MSGP Industrial Stormwater/Snowmelt Discharge Collection Form

Name of Facility:

Address:

Person(s)/Title(s) collecting sample:

Permit Tracking Number:

Outfall Numbers/Sample Locations:

Discharge Information

Nature of Discharge (circle one): Rainfall or Snowmelt

Rainfall Amount (inches):

Date of Discharge Sampling:

Date & Time Storm Began:

Date & Time Storm Ended:

Date & Time of Previous Measurable Storm Event:

Type of Analyses Required

Sample Collection Information

Date & Time Sample Collection Began:

Date & Time Sample Collection Ended (if different):

Date	Time	Sample Identification/Outfall	Preservative (Y/N)	Number of Containers								Collection Method	Laboratory Log Number

Shaded area for laboratory use only

Sampled by: (*signature*)	Date/Time:	Relinquished by: (*signature*)	Date/Time:	Received by: (*signature*)	Date/Time:
Received by: (*signature*)	Date/Time:	Received by: (*signature*)	Date/Time:	Received by: (*signature*)	Date/Time:

The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions below (attach additional sheets as necessary).

Certification by Facility Responsible Official (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

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 gathered and evaluated 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.

A. Name_____

B. Title_____

C. Signature_____

C. Date Signed_____

Attachment F –Industrial General Permit - 2021 MSGP

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

TENTATIVE ORDER WQ 20XX-XXXX-DWQ
AMENDING
GENERAL PERMIT FOR
STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES

ORDER
NPDES NO. CAS000001

This Order was adopted by the State Water Resources Control Board on:	**April 1, 2014**
This Order became effective on:	**July 1, 2015**
Order No. 2015-0122-DWQ was adopted on:	**August 4, 2015**
Order No. 20XX-XXXX-DWQ was adopted on:	**[ADOPTION DATE]**
Order No. 20XX-XXXX-DWQ shall become effective on:	**[EFFECTIVE DATE]**
This Order shall expire on:	**June 30, 2020**

IT IS HEREBY ORDERED that Order No. 20XX-XXXX-DWQ amends Order No. 2014-0057-DWQ as amended by Order No. 2015-0122-DWQ. Additions to Order 2014-0057-DWQ as amended by Order No. 2015-0122-DWQ are reflected in blue-underline text and deletions are reflected in ~~red-strikeout text~~.

IT IS FURTHER ORDERED that staff are directed to prepare and post a conformed copy of Order 2014-0057-DWQ incorporating the revisions made by this Order.

CERTIFICATION

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order, including its fact sheet, attachments, and appendices is a full, true, and correct copy of an Order adopted by the State Water Resources Control Board, on [DATE].

AYE:
NAY:
ABSENT:
ABSTAIN:

Jeanine Townsend
Clerk to the Board

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TABLES

ATTACHMENTS AND APPENDICES

I. FINDINGS

A. General Findings

The State Water Resources Control Board (State Water Board) finds that:

1. The general permit for storm water discharges associated with industrial activities [1] (General Permit) was issued by the State Water Board as a National Pollutant Discharge Elimination System (NPDES) permit under the authority delegated by the U.S. Environmental Protection Agency. The General Permit was adopted on April 1, 2014, and became effective on July 1, 2015.

2. The General Permit requires Dischargers to submit permit registration documents to obtain Notice of Intent (NOI) coverage under the General Permit using the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) website by July 1, 2015. Leading up to the July 1, 2015 deadline, SMARTS experienced technical difficulties that rendered SMARTS inaccessible to Dischargers attempting to file permit registration documents as well as State Water Board staff who were assisting Dischargers with enrollment. State Water Board staff diligently worked to resolve the technical issues before the July 1, 2015 deadline, but technical problems persisted, particularly as there was a surge in online traffic on SMARTS in the days before the July 1, 2015 effective date.

3. Because of ongoing technical difficulties, a large number of Dischargers were unable to submit the required permit registration documents through SMARTS by July 1, 2015 despite repeated attempts to use SMARTS. The deadline for Existing Dischargers to electronically submit permit registration documents for NOI coverage is extended to August 14, 2015 in accordance with Attachment A to this Order so that State Water Board staff has additional time to resolve technical issues with SMARTS. The filing date for Dischargers who file for NOI coverage on or before August 14, 2015 will be deemed to be July 1, 2015. The deadline for New Dischargers registering for NOI coverage to electronically submit permit registration documents is extended to August 14, 2015 or at least seven (7) days prior to commencement of industrial activities, whichever is later, in accordance with Attachment A to this Order. The filing date for New Dischargers who file for NOI coverage on or before August 14, 2015 will be deemed to be July 1, 2015 or seven (7) days prior to commencement of industrial activities, whichever is later.

4. While technical issues are being resolved, the General Permit is in effect. The deadline extension does not affect any of the other requirements or deadlines in the General Permit. Dischargers must maintain permit registration documents on site until they are able to submit the documents using SMARTS, and they must submit permit registration documents

[1] State Water Board Order 2014-0057-DWQ

electronically by August 14, 2015. Any other information required by the General Permit to be submitted electronically, such as monitoring data, must also be kept on site until Dischargers are able to submit the information using SMARTS, and that information must be submitted electronically by August 14, 2015. Until August 14, 2015, the permit registration documents maintained onsite by the Discharger shall determine compliance with Section II (Receiving General Permit Coverage) of the General Permit.

5. State Water Board Order 97-03-DWQ was rescinded (except for Order 97-03-DWQ requirements that annual reports be submitted by July 1, 2015 and except for enforcement purposes) as of July 1, 2015. Because of technical difficulties in SMARTS the deadline to submit Annual Reports under Order 97-03-DWQ is extended to August 14, 2015.

6. Per Code of Federal Regulations, part 40, sections 122.62 and 124.10, the State Water Board issued a Public Notice on July 3, 2015 for a 30-day public review and comment period on the proposed amendment to Order 2014-0057-DWQ, as specified in Attachment A to this Order. Formal comments were due by
August 3, 2015.

7. The Federal Clean Water Act (Clean Water Act) prohibits certain discharges of storm water containing pollutants except in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. (33 U.S.C. §§ 1311, 1342 (also referred to as Clean Water Act §§ 301, 402).) The United States Environmental Protection Agency (U.S. EPA) promulgates federal regulations to implement the Clean Water Act's mandate to control pollutants in storm water discharges. (40 C.F.R. § 122, et seq.) The NPDES permit must require implementation of Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges (NSWDs). The NPDES permit must also include additional requirements necessary to implement applicable water quality objectives or water quality standards (water quality standards, collectively).

8. On November 16, 1990, U.S. EPA promulgated Phase I storm water regulations in compliance with section 402(p) of the Clean Water Act. (55 Fed. Reg. 47990, codified at 40 C.F.R. § 122.26.) These regulations require operators of facilities subject to storm water permitting (Dischargers), that discharge storm water associated with industrial activity (industrial storm water discharges), to obtain an NPDES permit. Section 402(p)(3)(A) of the Clean Water Act also requires that permits for discharges associated with industrial activity include requirements necessary to meet water quality standards.

9. Phase II storm water regulations[1][2] require permitting for storm water discharges from facilities owned and operated by a municipality with a population of less than 100,000. The previous exemption from the Phase I permitting requirements under section 1068 of the Intermodal Surface Transportation Efficiency Act of 1991 was eliminated.

10. This Order (General Permit) is an NPDES General Permit issued in compliance with section 402 of the Clean Water Act and shall take effect on July 1, 2015, provided that the Regional Administrator of U.S. EPA has no objection. If the U.S. EPA Regional Administrator has an objection, this General Permit will not become effective until the objection is withdrawn.

11. This action to adopt an NPDES General Permit is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000, et seq.) in accordance with section 13389 of the Water Code. (See *County of Los Angeles v. California State Water Resources Control Bd.* (2006) 143 Cal.App.4th 985.)

12. State Water Board Order 97-03-DWQ is rescinded as of the effective date of this General Permit (July 1, 2015) except for Order 97-03-DWQ's requirement that annual reports be submitted by August 14, 2015 and except for enforcement purposes.

13. Effective July 1, 2015, the State Water Board and the Regional Water Quality Control Boards (Regional Water Boards) (Water Boards, collectively) will enforce the provisions herein.

14. This General Permit authorizes discharges of industrial storm water to waters of the United States, so long as those discharges comply with all requirements, provisions, limitations, and prohibitions in this General Permit.

15. Industrial activities covered under this General Permit are described in Attachment A.

16. The Fact Sheet for this Order is incorporated as findings of this General Permit.

17. Acronyms are defined in Attachment B and terms used in this General Permit are defined in Attachment C.

18. This General Permit regulates industrial storm water discharges and authorized NSWDs from specific categories of industrial facilities identified in Attachment A hereto, and industrial storm water discharges and authorized NSWDs from facilities designated by the Regional Water Boards to obtain coverage under this General Permit. This General Permit does not apply to industrial storm water discharges and NSWDs that are regulated by other individual or general NPDES permits

[1][2] U.S. EPA. Final NPDES Phase II Rule. <http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm>. [as of February 4, 2014]

19. This General Permit does not preempt or supersede the authority of municipal agencies to prohibit, restrict, or control industrial storm water discharges and authorized NSWDs that may discharge to storm water conveyance systems or other watercourses within their jurisdictions as allowed by state and federal law.

20. All terms defined in the Clean Water Act, U.S. EPA regulations, and the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000, et seq.) will have the same definition in this General Permit unless otherwise stated.

21. Pursuant to 40 Code of Federal Regulations section 131.12 and State Water Board Resolution 68-16, which incorporates the requirements of 40 Code of Federal Regulations section 131.12 where applicable, the State Water Board finds that discharges in compliance with this General Permit will not result in the lowering of water quality to a level that does not achieve water quality objectives and protect beneficial uses. Any degradation of water quality from existing high quality water to a level that achieves water quality objectives and protects beneficial uses is appropriate to support economic development. This General Permit's requirements constitute best practicable treatment or control for discharges of industrial storm water and authorized non-storm water discharges, and are therefore consistent with those provisions.

22. Compliance with any specific limits or requirements contained in this General Permit does not constitute compliance with any other applicable permits.

23. This General Permit requires that the Discharger certify and submit all Permit Registration Documents (PRDs) for Notice of Intent (NOI) and No Exposure Certification (NEC) coverage via the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) website. (See Attachment D for an example of the information required to be submitted in the PRDs via SMARTS.) All other documents required by this General Permit to be electronically certified and submitted via SMARTS can be submitted by the Discharger or by a designated Duly Authorized Representative on behalf of the Discharger. Electronic reporting is required to reduce the state's reliance on paper, to improve efficiency, and to make such General Permit documents more easily accessible to the public and the Water Boards.

24. All information provided to the Water Boards shall comply with the Homeland Security Act and all other federal law that concerns security in the United States, as applicable.

B. Industrial Activities Not Covered Under this General Permit

25. Discharges of storm water from areas on tribal lands are not covered under this General Permit. Storm water discharges from industrial facilities on tribal lands are regulated by a separate NPDES permit issued by U.S. EPA.

26. Discharges of storm water regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board are not covered under this General Permit, including the State Water Board

NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.

27. Storm water discharges to combined sewer systems are not covered under this General Permit. These discharges must be covered by an individual permit. (40 C.F.R. § 122.26(a)(7).)

28. Conveyances that discharge storm water runoff combined with municipal sewage are not covered under this General Permit.

29. Discharges of storm water identified in Clean Water Act section 402(l) (33 U.S.C. § 1342(l)) are not covered under this General Permit.

30. Facilities otherwise subject to this General Permit but for which a valid Notice of Non-Applicability (NONA) has been certified and submitted via SMARTS, by the Entity are not covered under this General Permit. Entities (See Section XX.C.1 of this General Permit) who are claiming "No Discharge" through the NONA shall meet the eligibility requirements and provide a No Discharge Technical Report in accordance with Section XX.C.

31. This General Permit does not authorize discharges of dredged or fill material regulated by the US Army Corps of Engineers under section 404 of the Clean Water Act and does not constitute a water quality certification under section 401 of the Clean Water Act.

C. Discharge Prohibitions

32. Pursuant to section 13243 of the Water Code, the State Water Board may specify certain conditions or areas where the discharge of waste, or certain types of waste, is prohibited.

33. With the exception of certain authorized NSWDs as defined in Section IV, this General Permit prohibits NSWDs. The State Water Board recognizes that certain NSWDs should be authorized because they are not generated by industrial activity, are not significant sources of pollutants when managed appropriately, and are generally unavoidable because they are related to safety or would occur regardless of industrial activity. Prohibited NSWDs may be authorized under other individual or general NPDES permits, or waste discharge requirements issued by the Water Boards.

34. Prohibited NSWDs are referred to as unauthorized NSWDs in this General Permit. Unauthorized NSWDs shall be either eliminated or permitted by a separate NPDES permit. Unauthorized NSWDs may contribute significant pollutant loads to receiving waters. Measures to control sources of unauthorized NSWDs such as spills, leakage, and dumping, must be addressed through the implementation of Best Management Practices (BMPs).

35. This General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the Water Boards.

36. Direct discharges of waste, including industrial storm water discharges, to Areas of Special Biological Significance (ASBS) are prohibited unless the Discharger has applied for and the State Water Board has granted an exception to the State Water Board's 2009 Water Quality Control Plan for Ocean Waters of California as amended by State Water Board Resolution 2012-0056 (California Ocean Plan)[~~2~~3] allowing the discharge.

D. Effluent Limitations

37. Section 301(b) of the Clean Water Act and 40 Code of Federal Regulations section require NPDES permits to include technology-based requirements at a minimum, and any more stringent effluent limitations necessary for receiving waters to meet applicable water quality standards. Clean Water Act section 402(p)(3)(A) requires that discharges of storm water runoff from industrial facilities comply with Clean Water Act section 301.

38. This General Permit requires control of pollutant discharges using BAT and BCT to reduce and prevent discharges of pollutants, and any more stringent effluent limitations necessary for receiving waters to meet applicable water quality standards.

39. It is not feasible for the State Water Board to establish numeric technology based effluent limitations for discharges authorized by this General Permit at this time. The rationale for this determination is discussed in detail in the Fact Sheet of this General Permit. Therefore, this General Permit requires Dischargers to implement minimum BMPs and applicable advanced BMPs as defined in Section X.H (collectively, BMPs) to comply with the requirements of this General Permit. This approach is consistent with U.S. EPA's 2008 Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (2008 MSGP).

40. 40 Code of Federal Regulations section 122.44(d) requires that NPDES permits include Water Quality Based Effluent Limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality standards for receiving waters.

41. Where numeric water quality criteria have not been established, 40 Code of Federal Regulations section 122.44(d)(1)(vi) provides that WQBELs may be established using U.S. EPA criteria guidance under section 304(a) of the Clean Water Act, a proposed state criteria or policy interpreting narrative criteria supplemented with other relevant information, and/or an indicator parameter.

[~~2~~3] State Water Resources Control Board. Ocean Standards Web Page. <http://www.waterboards.ca.gov/water_issues/programs/ocean/>. [as of February 4, 2014].
State Water Resources Control Board. Water Quality Control Plan for Ocean Waters of California 2009. <http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/2009_cop_adoptedeffective_usepa.pdf>. [as of February 4, 2014].
State Water Resources Control Board. Resolution 2012-0056. <http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0056.pdf>. [as of February 4, 2014].

42. This General Permit requires Dischargers to implement BMPs when necessary, in order to support attainment of water quality standards. The use of BMPs to control or abate the discharge of pollutants is authorized by 40 Code of Federal Regulations section 122.44(k)(3) because numeric effluent limitations are infeasible and implementation of BMPs is reasonably necessary to achieve effluent limitations and water quality standards, and to carry out the purposes and intent of the Clean Water Act. (40 C.F.R. § 122.44(k)(4).)

E. Receiving Water Limitations

43. This General Permit requires compliance with receiving water limitations based on water quality standards. The primary receiving water limitation requires that industrial storm water discharges and authorized NSWDs not cause or contribute to an exceedance of applicable water quality standards. Water quality standards apply to the quality of the receiving water, not the quality of the industrial storm water discharge. Therefore, compliance with the receiving water limitations generally cannot be determined solely by the effluent water quality characteristics. If any Discharger's storm water discharge causes or contributes to an exceedance of a water quality standard, that Discharger must implement additional BMPs or other control measures in order to attain compliance with the receiving water limitation. Compliance with water quality standards may, in some cases, require Dischargers to implement controls that are more protective than controls implemented solely to comply with the technology-based requirements in this General Permit.

F. Total Maximum Daily Loads (TMDLs)

44. TMDLs relate to the maximum amount of a pollutant that a water body can receive and still attain water quality standards. A TMDL is defined as the sum of the allowable loads of a single pollutant from all contributing point sources (the waste load allocations) and non-point sources (load allocations), plus the contribution from background sources. (40 C.F.R. § 130.2(i).) Discharges addressed by this General Permit are considered to be point source discharges, and therefore must comply with effluent limitations that are "consistent with the assumptions and requirements of any available waste load allocation for the discharge prepared by the state and approved by U.S. EPA pursuant to 40 Code of Federal Regulations section 130.7. (40 C.F.R. § 122.44 (d)(1)(vii).) In addition, Water Code section 13263, subdivision (a), requires that waste discharge requirements implement any relevant water quality control plans. Many TMDLs ~~contained~~ in water quality control plans include implementation requirements in addition to waste load allocations. Attachment E of this General Permit ~~lists the~~contains the TMDL-specific requirements for watersheds with U.S. EPA-approved and U.S. EPA-established TMDLs ~~that include requirements, including waste load allocations,~~ for Dischargers covered by this General Permit.

45. The State Water Board recognizes ~~that it is appropriate~~the responsibility to develop TMDL-specific permit requirements derived from each TMDL's waste load allocation and implementation requirements, in order ~~to provide clarity to Dischargers regarding their responsibilities for compliance with applicable TMDLs~~for Dischargers to implement and comply with the TMDL. The development of TMDL-specific permit requirements is subject to public noticing requirements and a corresponding public comment period. ~~Due~~The amendment to implement TMDLs was a lengthy process due to the number and variety of Dischargers subject to a wide range of TMDLs, and the necessary development of TMDL-specific permit requirements for each TMDL listed in Attachment E ~~will~~. To avoid severely ~~delay~~delaying the 2014 reissuance of this General Permit~~. Because most~~, the State Water Board adopted a subsequent amendment to this General Permit to incorporate TMDLs. The majority of the TMDLs were established by the Regional Water Boards~~, and because~~; additionally some of the waste load allocations and/or implementation requirements may be shared by multiple Dischargers. Therefore, the State Water Board development of TMDL-specific permit requirements ~~is best~~was coordinated ~~at~~with the applicable Regional Water ~~Board level~~Boards.

46. State and Regional Water Board staff ~~will develop proposed~~developed TMDL-specific permit requirements (including monitoring and reporting requirements) for each of the TMDLs listed in Attachment E. After conducting a 30-day public comment period, the Regional Water Boards ~~will submit~~submitted to the State Water Board proposed TMDL-specific permit requirements for adoption by the State Water Board into this General Permit ~~by July 1, 2016.~~. The Regional Water Boards ~~may also include~~ proposed TMDL-specific monitoring requirements for inclusion in this General Permit~~, or may issue Regional Water Board orders pursuant to Water Code section 13383 requiring TMDL-specific monitoring. The proposed TMDL-specific permit requirements shall have no force or effect until adopted, with or without modification, by the State Water Board. Consistent with the 2008 MSGP, Dischargers are not required to take any additional actions to comply with the TMDLs listed in Attachment E until the State Water Board reopens this General Permit and includes TMDL-specific permit requirements, unless notified otherwise by a Regional Water Board.~~ .

47. The Regional Water Boards ~~shall submit~~submitted to the State Water Board the following information for each of the TMDLs listed in Attachment E:

    a. Proposed TMDL-specific permit, monitoring and reporting requirements applicable to industrial storm water discharges and NSWDs authorized under this General Permit, including compliance schedules and deliverables consistent with the TMDLs. TMDL-specific permit requirements are not limited by the BAT/BCT technology-based standards;

    b. An explanation of how the proposed TMDL-specific permit requirements, compliance schedules, and deliverables are consistent with the

assumptions and requirements of any applicable waste load allocation and implement each TMDL; and,

c. Where a BMP-based approach is proposed, an explanation of how the proposed BMPs will be sufficient to implement applicable waste load allocations.

48. Upon receipt of the information described in Finding ~~40, and no later than July 1, 2016,~~47, and after incorporation of the TMDL-specific implementation language into this General Permit, the State Water Board ~~will issue~~issued a public notice and ~~conduct~~conducted a public comment period for the reopening of this General Permit to amend Attachment E, the Fact Sheet, and other provisions as necessary for incorporation of TMDL-specific permit requirements into this General Permit. ~~Attachment E may also be subsequently reopened during the term of this General Permit to incorporate additional TMDL-specific permit requirements.~~

49. Dischargers that are subject to TMDL-specific permit requirements are referred to as "Responsible Dischargers."

50. TMDL-specific permit requirements do not apply to Dischargers with NEC coverage or meeting the NONA criteria.

51. This General Permit's NALs found in Table 2 shall continue to apply to Responsible Dischargers in addition to the TNALs and NELs found in the General Permit TMDL Compliance Table.

52. The State Water Board Executive Director has the authority to incorporate a reanalyzed Regional Water Board adopted Water Effect Ratio (WER) into this General Permit.

53. Responsible Dischargers shall refer to Section XII.A for the Exceedance Response Actions requirements upon a TNAL exceedance.

54. All TNALs are applied as Instantaneous Maximum values as defined in Section XII.A.2; there are no Annual TNALs in this General Permit.

55. All Numeric Effluent Limitations (NELs) are applied as Instantaneous Maximum values as defined in Section XII.A.2. There are no Annual NELs in this General Permit.

56. The State Water Board allows Dischargers statewide to comply with the alternative compliance options in Attachment I instead of complying with applicable numeric action levels (NALs), Discharge Prohibitions Section III.C, TMDL waste load allocations (WLAs), and Receiving Water Limitations. Dischargers are still required to comply with applicable Subchapter N effluent limitations.

G. Discharges Subject to the California Ocean Plan

57. ~~49.~~ On October 16, 2012 the State Water Board amended the California Ocean Plan. The amended California Ocean Plan requires industrial storm water dischargers with outfalls discharging to ocean waters to comply with the California Ocean Plan's model monitoring provisions. These provisions require Dischargers to: (a) monitor runoff for specific parameters at all outfalls from two storm events per year, and collect at least one representative receiving water sample per year, (b) conduct specified toxicity monitoring at certain types of outfalls at a minimum of once per year, and (c) conduct marine sediment monitoring for toxicity under specific circumstances. The California Ocean Plan provides conditions under which some of the above monitoring provisions may be waived by the Water Boards.

58. ~~50.~~ This General Permit requires Dischargers with outfalls discharging to ocean waters that are subject to the model monitoring provisions of the California Ocean Plan to develop and implement a monitoring plan in compliance with those provisions and any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers that have not developed and implemented a monitoring program in compliance with the California Ocean Plan's model monitoring provisions by July 1, 2015 (the effective date of this General Permit), or seven (7) days prior to commencing operations, whichever is later, are ineligible to obtain coverage under this General Permit.

59. ~~51.~~ The California Ocean Plan prohibits the direct discharge of waste to ASBS. ASBS are defined in California Ocean Plan as "those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable."

60. ~~52.~~ The California Ocean Plan authorizes the State Water Board to grant an exception to Ocean Plan provisions where the board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served.

61. ~~53.~~ On March 20, 2012, the State Water Board adopted Resolution 2012-0012 which contains exceptions to the California Ocean Plan for specific discharges of storm water and non-point sources. This resolution also contains the special protections that are to be implemented for those discharges to ASBS.

62. ~~54.~~ This General Permit requires Dischargers who have been granted an exception to the Ocean Plan authorizing the discharges to ASBS by the State Water Board to comply with the requirements contained in Section VIII.B of this General Permit.

H. Training

63. ~~55.~~ To improve compliance and maintain consistent implementation of this General Permit, Dischargers are required to designate a Qualified Industrial Storm Water Practitioner (QISP) for each facility the Discharger operates that has entered Level 1 status in the Exceedance Response Action (ERA) process as described in Section XII of this General Permit. A QISP may be assigned to more than one facility. In order to qualify as a QISP, a State Water Board-sponsored or approved training course must be completed. A competency exam may be required by the State Water Board to demonstrate sufficient knowledge of the QISP course material.

64. ~~56.~~ A QISP must assist the Discharger in completing the Level 1 status and Level 2 status ERA requirements as specified in Section XII of this General Permit. A QISP is also responsible for assisting New Dischargers that will be discharging to an impaired water body with a 303(d) listed impairment, demonstrate eligibility for coverage through preparing the data and/or information required in Section VII.B.

65. ~~57.~~ A Compliance Group Leader, as defined in Section XIV of this General Order must complete a State Water Board sponsored or approved training program for Compliance Group Leaders.

66. ~~58.~~ All engineering work subject to the Professional Engineers Act (Bus. & Prof. Code § 6700, et seq.) and required by this General Permit shall be performed by a California licensed professional engineer.

67. ~~59.~~ California licensed professional civil, industrial, chemical, and mechanical engineers and geologists have licenses that have professional overlap with the topics of this General Permit. The California Department of Consumer Affairs, Board for Professional Engineers, Land Surveyors and Geologists (CBPELSG) provides the licensure and regulation of professional civil, industrial, chemical, and mechanical engineers and professional geologists in California. The State Water Board is developing a specialized self-guided State Water Board-sponsored registration and training program specifically for these CPBELSG licensed engineers and geologists in good standing with CBPELSG.

I. Storm Water Pollution Prevention Plan (SWPPP) Requirements

68. ~~60.~~ This General Permit requires the development of a site-specific SWPPP in accordance with Section X of this General Permit. The SWPPP must include the information needed to demonstrate compliance with the requirements of this General Permit. The SWPPP must be submitted electronically via SMARTS, and a copy be kept at the facility. SWPPP revisions shall be completed in accordance with Section X.B of this General Permit.

J. Sampling, Visual Observations, Reporting and Record Keeping

69. ~~61.~~ This General Permit complies with 40 Code of Federal Regulations section 122.44(i), which establishes monitoring requirements that must be

included in storm water permits, including requiring the use of sufficiently sensitive U.S. EPA-approved methods, where they exist. Under this General Permit, Dischargers are required to: (a) conduct an Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation) to identify areas of the facility contributing pollutants to industrial storm water discharges, (b) evaluate whether measures to reduce or prevent industrial pollutant loads identified in the Discharger's SWPPP are adequate and properly implemented in accordance with the terms of this General Permit, and (c) determine whether additional control measures are needed.

70. ~~62.~~ This General Permit contains monitoring requirements that are necessary to determine whether pollutants are being discharged, and whether response actions are necessary. Data and information resulting from the monitoring will assist in Dischargers' evaluations of BMP effectiveness and compliance with this General Permit. Visual observations are one form of monitoring. This General Permit requires Dischargers to perform a variety of visual observations designed to identify pollutants in industrial storm water discharges and their sources. To comply with this General Permit Dischargers shall: (1) electronically self-report any violations via SMARTS, (2) comply with the Level 1 status and Level 2 status ERA requirements, when applicable, and (3) adequately address and respond to any Regional Water Board comments on the Discharger's compliance reports.

71. ~~63.~~ Dischargers that meet the requirements of the No Exposure Certification (NEC) Conditional Exclusion set forth in Section XVII of this General Permit are exempt from the SWPPP requirements, sampling requirements, and visual observation requirements in this General Permit.

K. Facilities Subject to Federal Storm Water Effluent Limitation Guidelines (ELGs)

72. ~~64.~~ U.S. EPA regulations at 40 Code of Federal Regulations Chapter I Subchapter N (Subchapter N) establish technology-based Effluent Limitation Guidelines and New Source Performance Standards (ELGs) for industrial storm water discharges from facilities in specific industrial categories. For these facilities, compliance with the BAT/BCT and ELG requirements constitutes compliance with technology-based requirements of this General Permit.

73. ~~65.~~ 40 Code of Federal Regulations section 122.44(i)(3) and (4) require storm water permits to require at least one Annual Evaluation and any monitoring requirements for applicable ELGs in Subchapter N. This General Permit requires Dischargers to comply with all applicable ELG requirements found in Subchapter N.

L. Sampling and Analysis Reduction

74. ~~66.~~ This General Permit reduces the number of qualifying sampling events required to be sampled each year when the Discharger demonstrates:

(1) consistent compliance with this General Permit,(2) consistent effluent water quality sampling, and (3) analysis results that do not exceed numerical action levels.

M. Role of Numeric Action Levels (NALs) and Exceedance Response Actions (ERAs)

75. ~~67.~~ This General Permit incorporates a multiple objective performance measurement system that includes NALs, new comprehensive training requirements, Level 1 ERA Reports, Level 2 ERA Technical Reports, and Level 2 ERA Action Plans. Two objectives of the performance measurement system are to inform Dischargers, the public and the Water Boards on: (1) the overall pollutant control performance at any given facility, and (2) the overall performance of the industrial statewide storm water program. Additionally, the State Water Board expects that this information and assessment process will provide information necessary to determine the feasibility of numeric effluent limitations for industrial dischargers in the next reissuance of this General Permit, consistent with the State Water Board Storm Water Panel of Experts' June 2006 Recommendations.[~~3~~4]

76. ~~68.~~ This General Permit contains annual and instantaneous maximum NALs. The annual NALs are established as the 2008 MSGP benchmark values, and are applicable for all parameters listed in Table 2. The instantaneous maximum NALs are calculated from a Water Board dataset, and are only applicable for Total Suspended Solids (TSS), Oil and Grease (O&G), and pH. An NAL exceedance is determined as follows:

a. For annual NALs, an exceedance occurs when the average of all analytical results from all samples taken at a facility during a reporting year for a given parameter exceeds an annual NAL value listed in Table 2 of this General Permit; or,

b. For the instantaneous maximum NALs/TNALs, an exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the instantaneous maximum NAL/TNAL value (for Total Suspended Solids, and Oil and Grease), or are outside of the instantaneous maximum NAL/TNAL range (for pH) listed in Table 2 of this General Permit. For the purposes of this General Permit, the reporting year is July 1 through June 30.

77. ~~69.~~ The NALs/TNALs are not intended to serve as technology-based or water quality-based numeric effluent limitations. The NALs/TNALs are not derived directly from either BAT/BCT requirements or receiving water objectives. NAL/TNAL exceedances defined in this General Permit are not, in and of

[~~3~~4] State Water Board Storm Water Panel of Experts, The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities (June 19, 2006) <http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/numeric/swpanel_final_report.pdf> [as of February 4, 2014].

themselves, violations of this General Permit. A Discharger that does not fully comply with the Level 1 status and/or Level 2 status ERA requirements, when required by the terms of this General Permit, is in violation of this General Permit.

78. ~~70.~~ ERAs are designed to assist Dischargers in complying with this General Permit. Dischargers subject to ERAs must evaluate the effectiveness of their BMPs being implemented to ensure they are adequate to achieve compliance with this General Permit.

79. ~~71.~~ U.S. EPA regulations at Subchapter N establish ELGs for storm water discharges from facilities in 11 industrial categories. Dischargers subject to these ELGs are required to comply with the applicable requirements.

80. ~~72.~~ Exceedances of the NALs that are attributable solely to pollutants originating from non-industrial pollutant sources (such as run-on from adjacent facilities, non-industrial portions of the Discharger's property, or aerial deposition) are not a violation of this General Permit because the NALs are designed to provide feedback on industrial sources of pollutants. Dischargers may submit a Non-Industrial Source Pollutant Demonstration as part of their Level 2 ERA Technical Report to demonstrate that the presence of a pollutant causing an NAL/TNAL exceedance is attributable solely to pollutants originating from non-industrial pollutant sources.

81. ~~73.~~ A Discharger who has designed, installed, and implemented BMPs to reduce or prevent pollutants in industrial storm water discharges in compliance with this General Permit may submit an Industrial Activity BMPs Demonstration, as part of their Level 2 ERA Technical Report.

82. ~~74.~~ This General Permit establishes design storm standards for all treatment control BMPs. These design standards are directly based on the standards in State Water Board Order 2000-0011 regarding Standard Urban Storm Water Mitigation Plans (SUSMPs). These design standards are generally expected to be consistent with BAT/BCT, to be protective of water quality, and to be effective for most pollutants. The standards are intended to eliminate the need for most Dischargers to further treat/control industrial storm water discharges that are unlikely to contain pollutant loadings that exceed the NALs set forth in this General Permit.

N. Compliance Groups

83. ~~75.~~ Compliance Groups are groups of Dischargers (Compliance Group Participants) that share common types of pollutant sources and industrial activity characteristics. Compliance Groups provide an opportunity for the Compliance Group Participants to combine resources and develop consolidated Level 1 ERA Reports for Level 1 NAL/TNAL exceedances and appropriate BMPs for implementation in response to Level 2 status ERA requirements that are representative of the entire Compliance Group. Compliance Groups also provide the Water Boards and the public with

valuable information as to how industrial storm water discharges are affected by non-industrial background pollutant sources (including natural background) and geographic locations. When developing the next reissuance of this General Permit, the State Water Board expects to have a better understanding of the feasibility and benefits of sector-specific and watershed-based permitting alternatives, which may include technology- or water quality-based numeric effluent limitations. The effluent data, BMP performance data and other information provided from Compliance Groups' consolidated reporting will further assist the State Water Board in addressing sector-specific and watershed-based permitting alternatives.

Compliance Groups Participants who are Responsible Dischargers may participate in Compliance Groups with other Responsible Dischargers or Dischargers; however, the Compliance Group Leader is required to indicate which participants are Responsible Dischargers.

O. Conditional Exclusion – No Exposure Certification (NEC)

84. ~~76.~~ Pursuant to U.S. EPA Phase II regulations, all Dischargers subject to this General Permit may qualify for a conditional exclusion from specific requirements if they submit a NEC demonstrating that their facilities have no exposure of industrial activities and materials to storm water discharges.

85. ~~77.~~ This General Permit requires Dischargers who seek the NEC conditional exclusion to obtain coverage in accordance with Section XVII of this General Permit. Dischargers that meet the requirements of the NEC are exempt from the SWPPP, sampling requirements, and monitoring requirements in this General Permit.

86. ~~78.~~ Dischargers seeking NEC coverage are required to certify and submit the applicable permit registration documents. Annual inspections, re-certifications, and fees are required in subsequent years. Light industry facility Dischargers excluded from coverage under the previous permit (Order 97-03-DWQ) must obtain the appropriate coverage under this General Permit. Failure to comply with the Conditional Exclusion conditions listed in this General Permit may lead to enforcement for discharging without a permit pursuant to sections 13385 or 13399.25, et seq., of the Water Code. A Discharger with NEC coverage that anticipates a change (or changes) in circumstances that would lead to exposure should register for permit coverage prior to the anticipated changes.

P. Special Requirements for Facilities Handling Plastic Materials

87. ~~79.~~ Section 13367 of the Water Code requires facilities handling preproduction plastic to implement specific BMPs aimed at minimizing discharges of such materials. The definition of Plastic Materials for the purposes of this General Permit includes the following types of sources of Plastic Materials: virgin and recycled plastic resin pellets, powders, flakes,

powdered additives, regrind, dust, and other types of preproduction plastics with the potential to discharge or migrate off-site.

Q. Regional Water Board Authorities

88. ~~80.~~ Regional Water Boards are primarily responsible for enforcement of this General Permit. This General Permit recognizes that Regional Water Boards have the authority to protect the beneficial uses of receiving waters and prevent degradation of water quality in their region. As such, Regional Water Boards may modify monitoring requirements and review, comment, approve or disapprove certain Discharger submittals required under this General Permit.

IT IS HEREBY ORDERED that all Dischargers subject to this General Permit shall comply with the following conditions and requirements.

II. RECEIVING GENERAL PERMIT COVERAGE

A. Certification

1. For Storm Water Multiple Application and Report Tracking System (SMARTS) electronic account management and security reasons, as well as enforceability of this General Permit, the Discharger's Legally Responsible Person (LRP) of an industrial facility seeking coverage under this General Permit shall certify and submit all Permit Registration Documents (PRDs) for Notice of Intent (NOI) or No Exposure Certification (NEC) coverage. All other documents shall be certified and submitted via SMARTS by the Discharger's (LRP) or by their Duly Authorized Representative in accordance with the Electronic Signature and Certification Requirements in Section XXI.K. All documents required by this General Permit that are certified and submitted via SMARTS shall be in accordance with Section XXI.K.

2. Hereinafter references to certifications and submittals by the Discharger refer to the Discharger's LRP and their Duly Authorized Representative.

B. Coverages

This General Permit includes requirements for two (2) types of permit coverage, NOI coverage and NEC coverage. State Water Board Order 97-03-DWQ (previous permit) remains in effect until July 1, 2015. When PRDs are certified and submitted and the annual fee is received, the State Water Board will assign the Discharger a Waste Discharger Identification (WDID) number.

1. General Permit Coverage (NOI Coverage)

   a. Dischargers that discharge storm water associated with industrial activity to waters of the United States are required to meet all applicable requirements of this General Permit.

   b. The Discharger shall register for coverage under this General Permit by certifying and submitting PRDs via SMARTS (http://smarts.waterboards.ca.gov), which consist of:

      i. A completed NOI and signed certification statement;

      ii. A copy of a current Site Map from the Storm Water Pollution Prevention Plan (SWPPP) in Section X.E;

      iii. A SWPPP (see Section X); and,

c. The Discharger shall pay the appropriate Annual Fee in accordance with California Code of Regulations, title 23, section 2200 et seq.[4][5]

2. General Permit Coverage (NEC Coverage)

a. Dischargers that certify their facility has no exposure of industrial activities or materials to storm water in accordance with Section XVII qualify for NEC coverage and are not required to comply with the SWPPP or monitoring requirements of this General Permit.

b. Dischargers who qualify for NEC coverage shall conduct one Annual Facility Comprehensive Compliance Evaluation (Annual Evaluation) as described in Section XV, pay an annual fee, and certify annually that their facilities continue to meet the NEC requirements.

c. The Discharger shall submit the following PRDs on or before October 1, 2015 for NEC coverage via SMARTS:

i. A completed NEC Form (Section XVII.F.1) and signed certification statement (Section XVII.H);

ii. A completed NEC Checklist (Section XVII.F.2); and

iii. A current Site Map consistent with requirements in Section X.E.;

d. The Discharger shall pay the appropriate annual fee in accordance with California Code of Regulations, title 23, section 2200 et seq.[5][6]

3. General PRD Requirements

a. Site Maps

Dischargers registering for NOI or NEC coverage shall prepare a site map(s) as part of their PRDs in accordance with Section X.E. A separate copy of the site map(s) is required to be in the SWPPP. If there is a significant change in the facility layout (e.g., new building, change in storage locations, boundary change, etc.) a revision to the site map is required and shall be certified and submitted via SMARTS.

b. A Discharger shall submit a single set of PRDs for coverage under this General Permit for multiple industrial activities occurring at the same facility.

c. Any information provided to the Water Boards by the Discharger shall comply with the Homeland Security Act and other federal law that addresses security in the United States; any information that does not

[4][5] Annual fees must be mailed or sent electronically using the State Water Boards' Electronic Funds Transfer (EFT) system in SMARTS.

[5][6] See footnote 4.

comply should not be submitted in the PRDs. The Discharger must provide justification to the Regional Water Board regarding redacted information within any submittal.

d. Dischargers may redact trade secrets from information that is submitted via SMARTS. Dischargers who certify and submit redacted information via SMARTS must include a general description of the redacted information and the basis for the redaction in the version that is submitted via SMARTS. Dischargers must submit complete and un-redacted versions of the information that are clearly labeled "CONFIDENTIAL" to the Regional Water Board within 30 days of the submittal of the redacted information. All information labeled "CONFIDENTIAL" will be maintained by the Water Boards in a separate, confidential file.

4. Schedule for Submitting PRDs - Existing Dischargers Under the Previous Permit.

a. Existing Dischargers[~~6~~7] with coverage under the previous permit shall continue coverage under the previous permit until July 1, 2015. All waste discharge requirements and conditions of the previous permit are in effect until July 1, 2015.

b. Existing Dischargers with coverage under the previous permit shall register for NOI coverage by or on August 14, 2015 or for NEC coverage by or on October 1, 2015. The filing date for Existing Dischargers that register for NOI coverage by or on August 14, 2015 shall be deemed July 1, 2015. Existing Dischargers previously listed in Category 10 (Light Industry) of the previous permit, and continue to have no exposure to industrial activities and materials, have until October 1, 2015 to register for NEC coverage.

c. Existing Dischargers with coverage under the previous permit, that do not register for NOI coverage by or on August 14, 2015, may have their permit coverage administratively terminated as soon as August 14, 2015.

d. Existing Dischargers with coverage under the previous permit that are eligible for NEC coverage but do not register for NEC coverage by October 1, 2015 may have their permit coverage administratively terminated as soon as October 1, 2015.

e. Existing Dischargers shall continue to comply with the SWPPP requirements in State Water Board Order 97-03-DWQ up to, but no later than, June 30, 2015.

[~~6~~7] Existing Dischargers are Dischargers with an active Notice of Intent (permit coverage) under the previous permit (97-03-DWQ) prior to the effective date of this General Permit.

f. Existing Dischargers shall implement an updated SWPPP in accordance with Section X by July 1, 2015.

g. Existing Dischargers that submit a Notice of Termination (NOT) under the previous permit prior to July 1, 2015 and that receive NOT approval from the Regional Water Board are not subject to this General Permit unless they subsequently submitted new PRDs.

5. Schedule for Submitting PRDs - New Dischargers Obtaining Coverage On or After July 1, 2015

a. New Dischargers registering for NOI coverage on or after July 1, 2015 shall certify and submit PRDs via SMARTS at least seven (7) days prior to commencement of industrial activities or on August 14, 2015, whichever comes later. The filing date for New Dischargers that register for NOI coverage by or on August 14, 2015 shall be deemed July 1, 2015 or seven (7) days prior to commencement of industrial activities, whichever comes later.

b. New Dischargers registering for NEC coverage shall electronically certify and submit PRDs via SMARTS by October 1, 2015, or at least seven (7) days prior to commencement of industrial activities, whichever is later.

C. Termination and Changes to General Permit Coverage

1. Dischargers with NOI or NEC coverage shall request termination of coverage under this General Permit when either (a) operation of the facility has been transferred to another entity, (b) the facility has ceased operations, completed closure activities, and removed all industrial related pollutants, or (c) the facility's operations have changed and are no longer subject to the General Permit. Dischargers shall certify and submit a Notice of Termination via SMARTS. Until a valid NOT is received, the Discharger remains responsible for compliance with this General Permit and payment of accrued annual fees.

2. Whenever there is a change to the facility location, the Discharger shall certify and submit new PRDs via SMARTS. When ownership changes, the prior Discharger (seller) must inform the new Discharger (buyer) of the General Permit applications and regulatory coverage requirements. The new Discharger must certify and submit new PRDs via SMARTS to obtain coverage under this General Permit.

3. Dischargers with NOI coverage where the facility qualifies for NEC coverage in accordance with Section XVII of this General Permit, may register for NEC coverage via SMARTS. Such Dischargers are not required to submit an NOT to cancel NOI coverage.

4. Dischargers with NEC coverage, where changes in the facility and/or facility operations occur, which result in NOI coverage instead of NEC coverage,

shall register for NOI coverage via SMARTS. Such Dischargers are not required to submit an NOT to cancel NEC coverage.

5. Dischargers shall provide additional information supporting an NOT, or revise their PRDs via SMARTS, upon request by the Regional Water Board.

6. Dischargers that are denied approval of a submitted NOT or registration for NEC coverage by the Regional Water Board, shall continue compliance with this General Permit under their existing NOI coverage.

7. New Dischargers (Dischargers with no previous NOI or NEC coverage) shall register for NOI coverage if the Regional Water Board denies NEC coverage.

D. Preparation Requirements

1. The following documents shall be certified and submitted by the Discharger via SMARTS:

   a. Annual Reports (Section XVI) and SWPPPs (Section X);

   b. NOTs;

   c. Sampling Frequency Reduction Certification (Section XI.C.7);

   d. Level 1 ERA Reports (Section XII.C) prepared by a QISP;

   e. Level 2 ERA Technical Reports and Level 2 ERA Action Plans (Sections XII.D.1-2) prepared by a QISP; and,

   f. SWPPPs for inactive mining operations as described in Section XIII, signed (wet signature and license number) by a California licensed professional engineer.

2. The following documents shall be signed (wet signature and license number) by a California licensed professional engineer:

   a. Calculations for Dischargers subject to Subchapter N in accordance with Section XI.D;

   b. Notice of Non-Applicability (NONA) Technical Reports described in Section XX.C for facilities that are engineered and constructed to have contained the maximum historic precipitation event (or series of events) using the precipitation data collected from the National Oceanic and Atmospheric Agency's website;

   c. NONA Technical Reports described in Section XX.C for facilities located in basins or other physical locations that are not tributaries or hydrologically connected to waters of the United States; and,

   d. SWPPPs for inactive mines described in Section XIII.

III. DISCHARGE PROHIBITIONS

A. All discharges of storm water to waters of the United States are prohibited except as specifically authorized by this General Permit or another NPDES permit.

B. Except for non-storm water discharges (NSWDs) authorized in Section IV, discharges of liquids or materials other than storm water, either directly or indirectly to waters of the United States, are prohibited unless authorized by another NPDES permit. Unauthorized NSWDs must be either eliminated or authorized by a separate NPDES permit.

C. Industrial storm water discharges and authorized NSWDs that contain pollutants that cause or threaten to cause pollution, contamination, or nuisance as defined in section 13050 of the Water Code, are prohibited.

D. Discharges that violate any discharge prohibitions contained in applicable Regional Water Board Water Quality Control Plans (Basin Plans), or statewide water quality control plans and policies are prohibited.

E. Discharges to ASBS are prohibited in accordance with the California Ocean Plan, unless granted an exception by the State Water Board and in compliance with the Special Protections contained in Resolution 2012-0012.

F. Industrial storm water discharges and NSWDs authorized by this General Permit that contain hazardous substances equal to or in excess of a reportable quantity listed in 40 Code of Federal Regulations sections 110.6, 117.21, or 302.6 are prohibited.

IV. AUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

A. The following NSWDs are authorized provided they meet the conditions of Section IV.B:

1. Fire-hydrant and fire prevention or response system flushing;

2. Potable water sources including potable water related to the operation, maintenance, or testing of potable water systems;

3. Drinking fountain water and atmospheric condensate including refrigeration, air conditioning, and compressor condensate;

4. Irrigation drainage and landscape watering provided all pesticides, herbicides and fertilizers have been applied in accordance with the manufacturer's label;

5. Uncontaminated natural springs, groundwater, foundation drainage, footing drainage;

6. Seawater infiltration where the seawater is discharged back into the source: and,

7. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blowdown or drains).

B. The NSWDs identified in Section IV.A are authorized by this General Permit if the following conditions are met:

1. The authorized NSWDs are not in violation of any Regional Water Board Water Quality Control Plans (Basin Plans) or other requirements, or statewide water quality control plans or policies requirement;

2. The authorized NSWDs are not in violation of any municipal agency ordinance or requirements;

3. BMPs are included in the SWPPP and implemented to:

   a. Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;

   b. Reduce, to the extent practicable, the flow or volume of authorized NSWDs;

   c. Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards; and,

   d. Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.

4. The Discharger conducts monthly visual observations (Section XI.A.1) of NSWDs and sources to ensure adequate BMP implementation and effectiveness; and,

5. The Discharger reports and describes all authorized NSWDs in the Annual Report.

C. Firefighting related discharges are not subject to this General Permit and are not subject to the conditions of Section IV.B. These discharges, however, may be subject to Regional Water Board enforcement actions under other sections of the Water Code. Firefighting related discharges that are contained and are later discharged may be subject to municipal agency ordinances and/or Regional Water Board requirements.

V. EFFLUENT LIMITATIONS

A. Dischargers shall implement BMPs that comply with the BAT/BCT requirements of this General Permit to reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.

B. Industrial storm water discharges from facilities subject to storm water ELGs in Subchapter N shall not exceed those storm water ELGs. The ELGs for industrial storm water discharges subject to Subchapter N are in Attachment F of this General Permit.

C. Dischargers located within a watershed for which a Total Maximum Daily Load (TMDL) has been approved by U.S. EPA, shall comply with any applicable TMDL-specific permit requirements that ~~have been incorporated into this General Permit in accordance with Section VII.A. Attachment E contains a reference list of potential TMDLs that may apply to Dischargers subject to this General Permit~~are set forth in Attachment E.

VI. RECEIVING WATER LIMITATIONS

A. Dischargers shall ensure that industrial storm water discharges and authorized NSWDs do not cause or contribute to an exceedance of any applicable water quality standards in any affected receiving water.

B. Dischargers shall ensure that industrial storm water discharges and authorized NSWDs do not adversely affect human health or the environment.

C. Dischargers shall ensure that industrial storm water discharges and authorized NSWDs do not contain pollutants in quantities that threaten to cause pollution or a public nuisance.

VII. TOTAL MAXIMUM DAILY LOADS (TMDLs)

A. Implementation

1. The State Water Board ~~shall reopen~~reopened and ~~amend~~amended this General Permit, including Attachment E, the Fact Sheet and other applicable Permit provisions as necessary, in order to incorporate TMDL-specific permit requirements, as described in Findings ~~38~~44 through ~~42. Once this General Permit is amended,~~ 53. Dischargers shall comply with the incorporated TMDL-specific ~~permit~~ requirements in accordance with any specified compliance schedule(s) starting on the Effective Date of the Amendment. TMDL-specific compliance dates that exceed the term of this General Permit may be included for reference, and are enforceable in the event that this General Permit is administratively extended or reissued.

2. The State Water Board ~~may, at its~~has the discretion~~,~~ to reopen this General Permit to add TMDL-specific permit requirements to Attachment E, or to incorporate new TMDLs adopted during the term of this General Permit that

include requirements applicable to Dischargers covered by this General Permit.

3. The TMDL-specific requirements are shown in the TMDL Compliance Table X, in Attachment E of this General Permit.

B. New Dischargers applying for NOI coverage under this General Permit that will be discharging to a water body with a 303(d) listed impairment are ineligible for coverage unless the Discharger submits data and/or information, prepared by a QISP, demonstrating that:

1. The Discharger has eliminated all exposure to storm water of the pollutant(s) for which the water body is impaired, has documented the procedures taken to prevent exposure onsite, and has retained such documentation with the SWPPP at the facility;

2. The pollutant for which the water body is impaired is not present at the Discharger's facility, and the Discharger has retained documentation of this finding with the SWPPP at the facility; or,

3. The discharge of any listed pollutant will not cause or contribute to an exceedance of a water quality standard. This is demonstrated if: (1) the discharge complies with the water quality standard at the point of discharge, or (2) if ~~there are sufficient remaining waste load allocations in an approved TMDL and~~ the discharge is controlled at least as stringently as similar discharges subject to that TMDL.

C. TMDL Monitoring and Reporting

1. The Responsible Discharger is required to perform sampling, analysis, and reporting in accordance with the requirements of this General Permit, and additional monitoring required in the TMDL Compliance Table X in Attachment E of this General Permit.

2. The Responsible Discharger shall compare all sampling and analytical results from each sample (individual or combined as authorized by XI.C.5) to the corresponding Instantaneous Maximum TNAL (defined in Section XII.A.2) values in the TMDL Compliance Table X in Attachment E of this General Order.

3. The Responsible Discharger is required to electronically calculate, track, and report its TNAL or NEL exceedances using SMARTS. SMARTS does not calculate a Responsible Discharger's Level Status when a TNAL is exceeded. The Responsible Discharger must calculate and report its Level Status and submit the information via SMARTS.

D. Exceedance Response Actions

1. The Responsible Discharger is required to follow the Exceedance Response Action requirements in Section XII of this General Permit when its discharge exceeds a TNAL.

2. The Responsible Discharger retains the same ERA Level status until July 1 following the Effective Date of this General Permit Amendment.

3. The Responsible Discharger with Level 1 or Level 2 status due to a TNAL exceedance is required to incorporate exceedance-related information into its required ERA reports in accordance with Section XII of this General Permit.

E. Responsible Dischargers with a NEL exceedance are in violation of this General Permit and must comply with the Water Quality Based Corrective Actions, as defined in this General Permit in Section XX.B. Responsible Dischargers shall continue to comply with the General Permit and perform ERAs as necessary for Table 2 exceedances.

F. Responsible Dischargers in compliance with a NEL for a TMDL in Attachment E are in compliance with the receiving water limitations for the water body-pollutant combination addressed by the TMDL.

G. Responsible Dischargers with discharges that do not exceed the level of a TNAL for a TMDL in Attachment E are in compliance with the receiving water limitations for the water body-pollutant combination addressed by the TMDL.

VIII. DISCHARGES SUBJECT TO THE CALIFORNIA OCEAN PLAN

A. Discharges to Ocean Waters

1. Dischargers with outfalls discharging to ocean waters that are subject to the model monitoring provisions of the California Ocean Plan shall develop and implement a monitoring plan in compliance with those provisions and any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers who have not developed and implemented a monitoring program in compliance with the California Ocean Plan's model monitoring provisions by July 1, 2015, or seven (7) days prior to commencing of operations, whichever is later, are ineligible to obtain coverage under this General Permit.

2. Dischargers are ineligible for the methods and exceptions provided in Section XI.C of this General permit for any of the outfalls discharging to ocean waters subject to the model monitoring provisions of the California Ocean Plan.

B. Discharge Granted an Exceptions for Areas of Special Biological Significance (ASBS)

Dischargers who were granted an exception to the California Ocean Plan prohibition against direct discharges of waste to an ASBS pursuant to Resolution 2012-0012[7][8] amended by Resolution 2012-0031[8][9] shall comply with the conditions and requirements set forth in Attachment G of this General Permit. Any Discharger that applies for and is granted an exception to the California Ocean Plan prohibition after July 1, 2013 shall comply with the conditions and requirements set forth in the granted exception.

IX. TRAINING QUALIFICATIONS

A. General

1. A Qualified Industrial Storm Water Practitioner (QISP) is a person (either the Discharger or a person designated by the Discharger) who has completed a State Water Board-sponsored or approved QISP training course[9][10], and has registered as a QISP via SMARTS. Upon completed registration the State Water Board will issue a QISP identification number.

2. The Executive Director of the State Water Board or an Executive Officer of a Regional Water Board may rescind any QISP's registration if it is found that the QISP has repeatedly demonstrated an inadequate level of performance in completing the QISP requirements in this General Permit. An individual whose QISP registration has been rescinded may request that the State Water Board review the rescission. Any request for review must be received by the State Water Board no later than 30 days of the date that the individual received written notice of the rescission.

3. Dischargers with Level 1 status shall:

   a. Designate a person to be the facility's QISP and ensure that this person has attended and satisfactorily completed the State Water Board-sponsored or approved QISP training course.

   b. Ensure that the facility's designated QISP provides sufficient training to the appropriate team members assigned to perform activities required by this General Permit.

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[7][8] State Water Resources Control Board. Resolution 2012-0012. <http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0012.pdf>. [as of February 4, 2014].

[8][9] State Water Resources Control Board. Resolution 2012-0031. <http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0031.pdf>. [as of February 4, 2014].

[9][10] A specialized self-guided State Water Board-sponsored registration and training program will be available as an option for CPBELSG licensed professional civil, mechanical, industrial, and chemical engineers and professional geologists by the effective date of this General Permit.

X. Storm Water Pollution Prevention Plan (SWPPP)

A. SWPPP Elements

Dischargers shall develop and implement a site-specific SWPPP for each industrial facility covered by this General Permit that shall contain the following elements, as described further in this Section[~~10~~11]:

1. Facility Name and Contact Information;
2. Site Map;
3. List of Industrial Materials;
4. Description of Potential Pollution Sources;
5. Assessment of Potential Pollutant Sources;
6. Minimum BMPs;
7. Advanced BMPs, if applicable;
8. Monitoring Implementation Plan;
9. Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation); and,
10. Date that SWPPP was Initially Prepared and the Date of Each SWPPP Amendment, if Applicable.

B. SWPPP Implementation and Revisions

All Dischargers are required to implement their SWPPP by July 1, 2015 or upon commencement of industrial activity. The Discharger shall:

1. Revise their on-site SWPPP whenever necessary;
2. Certify and submit via SMARTS their SWPPP within 30 days whenever the SWPPP contains significant revision(s); and,
3. With the exception of significant revisions, the Discharger is not required to certify and submit via SMARTS their SWPPP revisions more than once every three (3) months in the reporting year.

[~~10~~11] Appendix 1 (SWPPP Checklist) of this General Permit is provided to assist the Discharger in including information required in the SWPPP. This checklist is not required to be used.

C. SWPPP Performance Standards

1. The Discharger shall ensure a SWPPP is prepared to:

   a. Identify and evaluate all sources of pollutants that may affect the quality of industrial storm water discharges and authorized NSWDs;

   b. Identify and describe the minimum BMPs (Section X.H.1) and any advanced BMPs (Section X.H.2) implemented to reduce or prevent pollutants in industrial storm water discharges and authorized NSWDs. BMPs shall be selected to achieve compliance with this General Permit; and,

   c. Identify and describe conditions or circumstances which may require future revisions to be made to the SWPPP.

2. The Discharger shall prepare a SWPPP in accordance with all applicable SWPPP requirements of this Section. A copy of the SWPPP shall be maintained at the facility.

D. Planning and Organization

1. Pollution Prevention Team

   Each facility must have a Pollution Prevention Team established and responsible for assisting with the implementation of the requirements in this General Permit. The Discharger shall include in the SWPPP detailed information about its Pollution Prevention Team including:

   a. The positions within the facility organization (collectively, team members) who assist in implementing the SWPPP and conducting all monitoring requirements in this General Permit;

   b. The responsibilities, duties, and activities of each of the team members; and,

   c. The procedures to identify alternate team members to implement the SWPPP and conduct required monitoring when the regularly assigned team members are temporarily unavailable (due to vacation, illness, out of town business, or other absences).

2. Other Requirements and Existing Facility Plans

   a. The Discharger shall ensure its SWPPP is developed, implemented, and revised as necessary to be consistent with any applicable municipal, state, and federal requirements that pertain to the requirements in this General Permit.

   b. The Discharger may include in their SWPPP the specific elements of existing plans, procedures, or regulatory compliance documents that

contain storm water-related BMPs or otherwise relate to the requirements of this General Permit.

c. The Discharger shall properly reference the original sources for any elements of existing plans, procedures, or regulatory compliance documents included as part of their SWPPP and shall maintain a copy of the documents at the facility as part of the SWPPP.

d. The Discharger shall document in their SWPPP the facility's scheduled operating hours as defined in Attachment C. Scheduled facility operating hours that would be considered irregular (temporary, intermittent, seasonal, weather dependent, etc.) shall also be documented in the SWPPP.

E. Site Map

1. The Discharger shall prepare a site map that includes notes, legends, a north arrow, and other data as appropriate to ensure the map is clear, legible and understandable.

2. The Discharger may provide the required information on multiple site maps.

3. The Discharger shall include the following information on the site map:

   a. The facility boundary, storm water drainage areas within the facility boundary, and portions of any drainage area impacted by discharges from surrounding areas. Include the flow direction of each drainage area, on-facility surface water bodies, areas of soil erosion, and location(s) of nearby water bodies (such as rivers, lakes, wetlands, etc.) or municipal storm drain inlets that may receive the facility's industrial storm water discharges and authorized NSWDs;

   b. Locations of storm water collection and conveyance systems, associated discharge locations, and direction of flow. Include any sample locations if different than the identified discharge locations;

   c. Locations and descriptions of structural control measures[~~11~~12] that affect industrial storm water discharges, authorized NSWDs, and/or run-on;

   d. Identification of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures;

[~~11~~12] Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.

e. Locations where materials are directly exposed to precipitation and the locations where identified significant spills or leaks (Section X.G.1.d) have occurred; and

f. Areas of industrial activity subject to this General Permit. Identify all industrial storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and material reuse areas, and other areas of industrial activity that may have potential pollutant sources.

F. List of Industrial Materials

The Discharger shall ensure the SWPPP includes a list of industrial materials handled at the facility, and the locations where each material is stored, received, shipped, and handled, as well as the typical quantities and handling frequency.

G. Potential Pollutant Sources

1. Description of Potential Pollutant Sources

   a. Industrial Processes

      The Discharger shall ensure the SWPPP describes each industrial process including: manufacturing, cleaning, maintenance, recycling, disposal, and any other activities related to the process. The type, characteristics, and approximate quantity of industrial materials used in or resulting from the process shall be included. Areas protected by containment structures and the corresponding containment capacity shall be identified and described.

   b. Material Handling and Storage Areas

      The Discharger shall ensure the SWPPP describes each material handling and storage area, including: the type, characteristics, and quantity of industrial materials handled or stored; the shipping, receiving, and loading procedures; the spill or leak prevention and response procedures; and the areas protected by containment structures and the corresponding containment capacity.

   c. Dust and Particulate Generating Activities

      The Discharger shall ensure the SWPPP describes all industrial activities that generate a significant amount of dust or particulate that may be deposited within the facility boundaries. The SWPPP shall describe such industrial activities, including the discharge locations, the source type, and the characteristics of the dust or particulate pollutant.

d. Significant Spills and Leaks

The Discharger shall:

i. Evaluate the facility for areas where spills and leaks can likely occur;

ii. Ensure the SWPPP includes:

a) A list of any industrial materials that have spilled or leaked in significant quantities and have discharged from the facility's storm water conveyance system within the previous five-year period;

b) A list of any toxic chemicals identified in 40 Code of Federal Regulations section 302 that have been discharged from the facilities' storm water conveyance system as reported on U.S. EPA Form R, as well as oil and hazardous substances in excess of reportable quantities (40 C.F.R. §§ 110, 117, and 302) that have discharged from the facility's storm water conveyance system within the previous five-year period;

c) A list of any industrial materials that have spilled or leaked in significant quantities and had the potential to be discharged from the facility's storm water conveyance system within the previous five-year period; and,

iii. Ensure that for each discharge or potential discharge listed above the SWPPP includes the location, characteristics, and approximate quantity of the materials spilled or leaked; approximate quantity of the materials discharged from the facility's storm water conveyance system; the cleanup or remedial actions that have occurred or are planned; the approximate remaining quantity of materials that have the potential to be discharged; and the preventive measures taken to ensure spills or leaks of the material do not reoccur.

e. NSWDs

The Discharger shall:

i. Ensure the SWPPP includes an evaluation of the facility that identifies all NSWDs, sources, and drainage areas;

ii. Ensure the SWPPP includes an evaluation of all drains (inlets and outlets) that identifies connections to the storm water conveyance system;

iii. Ensure the SWPPP includes a description of how all unauthorized NSWDs have been eliminated; and,

iv. Ensure all NSWDs are described in the SWPPP. This description shall include the source, quantity, frequency, and characteristics of the NSWDs, associated drainage area, and whether it is an authorized or unauthorized NSWD in accordance with Section IV.

f. Erodible Surfaces

The Discharger shall ensure the SWPPP includes a description of the facility locations where soil erosion may be caused by industrial activity, contact with storm water, authorized and unauthorized NSWDs, or run-on from areas surrounding the facility.

2. Assessment of Potential Pollutant Sources

a. The Discharger shall ensure that the SWPPP includes a narrative assessment of all areas of industrial activity with potential industrial pollutant sources. At a minimum, the assessment shall include:

i. The areas of the facility with likely sources of pollutants in industrial storm water discharges and authorized NSWDs;

ii. The pollutants likely to be present in industrial storm water discharges and authorized NSWDs;

iii. The approximate quantity, physical characteristics (e.g., liquid, powder, solid, etc.), and locations of each industrial material handled, produced, stored, recycled, or disposed;

iv. The degree to which the pollutants associated with those materials may be exposed to, and mobilized by contact with, storm water;

v. The direct and indirect pathways by which pollutants may be exposed to storm water or authorized NSWDs;

vi. All sampling, visual observation, and inspection records;

vii. The effectiveness of existing BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized NSWDs;

viii. The estimated effectiveness of implementing, to the extent feasible, minimum BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized NSWDs; and,

ix. The identification of the industrial pollutants related to the receiving waters with 303(d) listed impairments identified in Appendix 3 or approved TMDLs that may be causing or contributing to an exceedance of a water quality standard in the receiving waters.

b. Based upon the assessment above, Dischargers shall identify in the SWPPP any areas of the facility where the minimum BMPs described in

subsection H.1 below will not adequately reduce or prevent pollutants in storm water discharges in compliance with Section V.A. Dischargers shall identify any advanced BMPs, as described in subsection H.2 below, for those areas.

c. Based upon the assessment above, Dischargers shall identify any drainage areas with no exposure to industrial activities and materials in accordance with the definitions in Section XVII.

d. Based upon the assessment above, Dischargers shall identify any additional parameters, beyond the required parameters in Section XI.B.6 that indicate the presence of pollutants in industrial storm water discharges.

H. Best Management Practices (BMPs)

1. Minimum BMPs

The Discharger shall, to the extent feasible, implement and maintain all of the following minimum BMPs to reduce or prevent pollutants in industrial storm water discharges.~~12~~13

a. Good Housekeeping

The Discharger shall:

i. Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly;

ii. Minimize or prevent material tracking;

iii. Minimize dust generated from industrial materials or activities;

iv. Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible;

v. Cover all stored industrial materials that can be readily mobilized by contact with storm water;

~~12~~13 For the purposes of this General Permit, the requirement to implement BMPs "to the extent feasible" requires Dischargers to select, design, install and implement BMPs that reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.

vi. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water;

vii. Prevent disposal of any rinse/wash waters or industrial materials into the storm water conveyance system;

viii. Minimize storm water discharges from non-industrial areas (e.g., storm water flows from employee parking area) that contact industrial areas of the facility; and,

ix. Minimize authorized NSWDs from non-industrial areas (e.g., potable water, fire hydrant testing, etc.) that contact industrial areas of the facility.

b. Preventive Maintenance

The Discharger shall:

i. Identify all equipment and systems used outdoors that may spill or leak pollutants;

ii. Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks;

iii. Establish an appropriate schedule for maintenance of identified equipment and systems; and,

iv. Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks.

c. Spill and Leak Prevention and Response

The Discharger shall:

i. Establish procedures and/or controls to minimize spills and leaks;

ii. Develop and implement spill and leak response procedures to prevent industrial materials from discharging through the storm water conveyance system. Spilled or leaked industrial materials shall be cleaned promptly and disposed of properly;

iii. Identify and describe all necessary and appropriate spill and leak response equipment, location(s) of spill and leak response equipment, and spill or leak response equipment maintenance procedures; and,

iv. Identify and train appropriate spill and leak response personnel.

d. Material Handling and Waste Management

The Discharger shall:

i. Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with storm water during a storm event;

ii. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water;

iii. Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;

iv. Divert run-on and storm water generated from within the facility away from all stockpiled materials;

v. Clean all spills of industrial materials or wastes that occur during handling in accordance with the spill response procedures (Section X.H.1.c); and,

vi. Observe and clean as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes.

e. Erosion and Sediment Controls

For each erodible surface facility location identified in the SWPPP (Section X.G.1.f), the Discharger shall:

i. Implement effective wind erosion controls;

ii. Provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storm event;

iii. Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site;

iv. Divert run-on and storm water generated from within the facility away from all erodible materials; and,

v. If sediment basins are implemented, ensure compliance with the design storm standards in Section X.H.6.

f. Employee Training Program

The Discharger shall:

i. Ensure that all team members implementing the various compliance activities of this General Permit are properly trained to implement the requirements of this General Permit, including but not limited to: BMP implementation, BMP effectiveness evaluations, visual observations,

and monitoring activities. If a Discharger enters Level 1 status, appropriate team members shall be trained by a QISP;

ii. Prepare or acquire appropriate training manuals or training materials;

iii. Identify which personnel need to be trained, their responsibilities, and the type of training they shall receive;

iv. Provide a training schedule; and,

v. Maintain documentation of all completed training classes and the personnel that received training in the SWPPP.

g. Quality Assurance and Record Keeping

The Discharger shall:

i. Develop and implement management procedures to ensure that appropriate staff implements all elements of the SWPPP, including the Monitoring Implementation Plan;

ii. Develop a method of tracking and recording the implementation of BMPs identified in the SWPPP; and

iii. Maintain the BMP implementation records, training records, and records related to any spills and clean-up related response activities for a minimum of five (5) years (Section XXI.J.4).

2. Advanced BMPs

a. In addition to the minimum BMPs described in Section X.H.1, the Discharger shall, to the extent feasible, implement and maintain any advanced BMPs identified in Section X.G.2.b, necessary to reduce or prevent discharges of pollutants in its storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.

b. Advanced BMPs may include one or more of the following BMPs:

i. Exposure Minimization BMPs

These include storm resistant shelters (either permanent or temporary) that prevent the contact of storm water with the identified industrial materials or area(s) of industrial activity.

ii. Storm Water Containment and Discharge Reduction BMPs

These include BMPs that divert, infiltrate, reuse, contain, retain, or reduce the volume of storm water runoff. Dischargers are

encouraged to utilize BMPs that infiltrate or reuse storm water where feasible.

iii. Treatment Control BMPs

This is the implementation of one or more mechanical, chemical, biologic, or any other treatment technology that will meet the treatment design standard.

iv. Other Advanced BMPs

Any additional BMPs not described in subsections b.i through iii above that are necessary to meet the effluent limitations of this General Permit.

3. Temporary Suspension of Industrial Activities

For facilities that plan to temporarily suspend industrial activities for ten (10) or more consecutive calendar days during a reporting year, the Discharger may also suspend monitoring if it is infeasible to conduct monitoring while industrial activities are suspended (e.g., the facility is not staffed, or the facility is remote or inaccessible) and the facility has been stabilized. The Discharger shall include in the SWPPP the BMPs necessary to achieve compliance with this General Permit during the temporary suspension of the industrial activity. Once all necessary BMPs have been implemented to stabilize the facility, the Discharger is not required to:

a. Perform monthly visual observations (Section XI.A.1.a.); or,

b. Perform sampling and analysis (Section XI.B.) if it is infeasible to do so (e.g. facility is remotely located).

The Discharger shall upload via SMARTS (7) seven calendar days prior to the planned temporary suspension of industrial activities:

a. SWPPP revisions specifically addressing the facility stabilization BMPs;

b. The justification for why monitoring is infeasible at the facility during the period of temporary suspension of industrial activities;

c. The date the facility is fully stabilized for temporary suspension of industrial activities; and,

d. The projected date that industrial activities will resume at the facility.

Upon resumption of industrial activities at the facility, the Discharger shall, via SMARTS, confirm and/or update the date the facility's industrial activities have resumed. At this time, the Discharger is required to resume all compliance activities under this General Permit.

The Regional Water Boards may review the submitted information pertaining to the temporary suspension of industrial activities. Upon review, the Regional Water Board may request revisions or reject the Discharger's request to temporarily suspend monitoring.

4. BMP Descriptions

   a. The Discharger shall ensure that the SWPPP identifies each BMP being implemented at the facility, including:

      i. The pollutant(s) that the BMP is designed to reduce or prevent in industrial storm water discharges;

      ii. The frequency, time(s) of day, or conditions when the BMP is scheduled for implementation;

      iii. The locations within each area of industrial activity or industrial pollutant source where the BMP shall be implemented;

      iv. The individual and/or position responsible for implementing the BMP;

      v. The procedures, including maintenance procedures, and/or instructions to implement the BMP effectively;

      vi. The equipment and tools necessary to implement the BMP effectively; and,

      vii. The BMPs that may require more frequent visual observations beyond the monthly visual observations as described in Section XI.A.1.

   b. The Discharger shall ensure that the SWPPP identifies and justifies each minimum BMP or applicable advanced BMP not being implemented at the facility because they do not reflect best industry practice considering technological availability and economic practicability and achievability.

   c. The Discharger shall identify any BMPs described in subsection a above that are implemented in lieu of any of the minimum or applicable advanced BMPs.

5. BMP Summary Table

   The Discharger shall prepare a table summarizing each identified area of industrial activity, the associated industrial pollutant sources, the industrial pollutants, and the BMPs being implemented.

6. Design Storm Standards for Treatment Control BMPs

All new treatment control BMPs employed by the Discharger to comply with Section X.H.2 Advanced BMPs and new sediment basins installed after the effective date of this order shall be designed to comply with design storm standards in this Section, except as provided in an Industrial Activity BMP Demonstration (Section XII.D.2.a). A Factor of Safety shall be incorporated into the design of all treatment control BMPs to ensure that storm water is sufficiently treated throughout the life of the treatment control BMPs. The design storm standards for treatment control BMPs are as follows:

a. Volume-based BMPs: The Discharger, at a minimum, shall calculate[~~13~~14] the volume to be treated using one of the following methods:

i. The volume of runoff produced from an 85th percentile 24-hour storm event, as determined from local, historical rainfall records;

ii. The volume of runoff produced by the 85th percentile 24-hour storm event, determined as the maximized capture runoff volume for the facility, from the formula recommended in the Water Environment Federation's Manual of Practice;[~~14~~15] or,

iii. The volume of annual runoff required to achieve 80% or more treatment, determined in accordance with the methodology set forth in the latest edition of California Stormwater Best Management Practices Handbook[~~15~~16], using local, historical rainfall records.

b. Flow-based BMPs: The Discharger shall calculate the flow needed to be treated using one of the following methods:

i. The maximum flow rate of runoff produced from a rainfall intensity of at least 0.2 inches per hour for each hour of a storm event;

ii. The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from local historical rainfall records, multiplied by a factor of two; or,

iii. The maximum flow rate of runoff, as determined using local historical rainfall records, that achieves approximately the same reduction in total pollutant loads as would be achieved by treatment of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

[~~13~~14] All hydrologic calculations shall be certified by a California licensed professional engineer in accordance with the Professional Engineers Act (Bus. & Prof. Code § 6700, et seq).

[~~14~~15] Water Environment Federation (WEF). Manual of Practice No. 23/ ASCE Manual of Practice No. 87, cited in chapter 5 (1998 Edition) and Cited in Chapter 3 (2012 Edition) .

[~~15~~16] California Stormwater Quality Association. Stormwater Best Management Practice New Development and Redevelopment Handbook. < http://www.casqa.org/ >. [as of July 3, 2013].

I. MONITORING IMPLEMENTATION PLAN

The Discharger shall prepare a Monitoring Implementation Plan in accordance with the requirements of this General Permit. The Monitoring Implementation Plan shall be included in the SWPPP and shall include the following items:

1. An identification of team members assigned to conduct the monitoring requirements;

2. A description of the following in accordance with Attachment H:

   a. Discharge locations;

   b. Visual observation procedures; and,

   c. Visual observation response procedures related to monthly visual observations and sampling event visual observations.

3. Justifications for any of the following that are applicable to the facility:

   a. Alternative discharge locations in accordance with Section XI.C.3;

   b. Representative Sampling Reduction in accordance with Section XI.C.4; or,

   c. Qualified Combined Samples in accordance with Section XI.C.5.

4. Procedures for field instrument calibration instructions, including calibration intervals specified by the manufacturer; and,

5. An example Chain of Custody form used when handling and shipping water quality samples to the lab.

XI. MONITORING

A. Visual Observations

1. Monthly Visual Observations

   a. At least once per calendar month, the Discharger shall visually observe each drainage area for the following:

      i. The presence or indications of prior, current, or potential unauthorized NSWDs and their sources;

      ii. Authorized NSWDs, sources, and associated BMPs to ensure compliance with Section IV.B.3; and,

iii. Outdoor industrial equipment and storage areas, outdoor industrial activities areas, BMPs, and all other potential source of industrial pollutants.

b. The monthly visual observations shall be conducted during daylight hours of scheduled facility operating hours and on days without precipitation.

c. The Discharger shall provide an explanation in the Annual Report for uncompleted monthly visual observations.

2. Sampling Event Visual Observations

Sampling event visual observations shall be conducted at the same time sampling occurs at a discharge location. At each discharge location where a sample is obtained, the Discharger shall observe the discharge of storm water associated with industrial activity.

a. The Discharger shall ensure that visual observations of storm water discharged from containment sources (e.g. secondary containment or storage ponds) are conducted at the time that the discharge is sampled.

b. Any Discharger employing volume-based or flow-based treatment BMPs shall sample any bypass that occurs while the visual observations and sampling of storm water discharges are conducted.

c. The Discharger shall visually observe and record the presence or absence of floating and suspended materials, oil and grease, discolorations, turbidity, odors, trash/debris, and source(s) of any discharged pollutants.

d. In the event that a discharge location is not visually observed during the sampling event, the Discharger shall record which discharge locations were not observed during sampling or that there was no discharge from the discharge location.

e. The Discharger shall provide an explanation in the Annual Report for uncompleted sampling event visual observations.

3. Visual Observation Records

The Discharger shall maintain records of all visual observations. Records shall include the date, approximate time, locations observed, presence and probable source of any observed pollutants, name of person(s) that conducted the observations, and any response actions and/or additional SWPPP revisions necessary in response to the visual observations.

4. The Discharger shall revise BMPs as necessary when the visual observations indicate pollutant sources have not been adequately addressed in the SWPPP.

B. Sampling and Analysis

1. A Qualifying Storm Event (QSE) is a precipitation event that:

   a. Produces a discharge for at least one drainage area; and,

   b. Is preceded by 48 hours with no discharge from any drainage area.

2. The Discharger shall collect and analyze storm water samples from two (2) QSEs within the first half of each reporting year (July 1 to December 31), and two (2) QSEs within the second half of each reporting year (January 1 to June 30).

3. Compliance Group Participants are only required to collect and analyze storm water samples from one (1) QSE within the first half of each reporting year (July 1 to December 31) and one (1) QSE within the second half of the reporting year (January 1 to June 30).

4. Except as provided in Section XI.C.4 (Representative Sampling Reduction), samples shall be collected from each drainage area at all discharge locations. The samples must be:

   a. Representative of storm water associated with industrial activities and any commingled authorized NSWDs; or,

   b. Associated with the discharge of contained storm water.

5. Samples from each discharge location shall be collected within four (4) hours of:

   a. The start of the discharge; or,

   b. The start of facility operations if the QSE occurs within the previous 12-hour period (e.g., for storms with discharges that begin during the night for facilities with day-time operating hours). Sample collection is required during scheduled facility operating hours and when sampling conditions are safe in accordance with Section XI.C.6.a.ii.

6. The Discharger shall analyze all collected samples for the following parameters:

   a. Total suspended solids (TSS) and oil and grease (O&G);

   b. pH (see Section XI.C.2);

c. Additional parameters identified by the Discharger on a facility-specific basis that serve as indicators of the presence of all industrial pollutants identified in the pollutant source assessment (Section X.G.2). These additional parameters may be modified (added or removed) in accordance with any updated SWPPP pollutant source assessment;

d. Additional applicable parameters listed in Table 1 below. These parameters are dependent on the facility Standard Industrial Classification (SIC) code(s);

e. Additional applicable industrial parameters related to receiving waters with 303(d) listed impairments or approved TMDLs based on the assessment in Section X.G.2.a.ix. Test methods with lower detection limits may be necessary when discharging to receiving waters with 303(d) listed impairments or TMDLs;

f. Additional parameters required by the Regional Water Board. The Discharger shall contact its Regional Water Board to determine appropriate analytical test methods for parameters not listed in Table 2 below. These analytical test methods will be added to SMARTS; and

g. For discharges subject to Subchapter N, additional parameters specifically required by Subchapter N. If the discharge is subject to ELGs, the Dischargers shall contact the Regional Water Board to determine appropriate analytical methods for parameters not listed in Table 2 below.

7. The Discharger shall select corresponding NALs, analytical test methods,, and reporting units from the list provided in Table 2 below. SMARTS will be updated over time to add additional acceptable analytical test methods. Dischargers may propose an analytical test method for any parameter or pollutant that does not have an analytical test method specified in Table 2 or in SMARTS. Dischargers may also propose analytical test methods with substantially similar or more stringent method detection limits than existing approved analytical test methods. Upon approval, the analytical test method will be added to SMARTS.

8. The Discharger shall ensure that the collection, preservation and handling of all storm water samples are in accordance with Attachment H, Storm Water Sample Collection and Handling Instructions.

9. Samples from different discharge locations shall not be combined or composited except as allowed in Section XI.C.5 (Qualified Combined Samples).

10. The Discharger shall ensure that all laboratory analyses are performed according to sufficiently sensitive test procedures and conducted according to test procedures under 40 Code of Federal Regulations part 136, including

the observation of holding times, unless other test procedures have been specified in this General Permit or by the Regional Water Board.

11. Sampling Analysis Reporting

a. The Discharger shall submit all sampling and analytical results for all individual or Qualified Combined Samples via SMARTS within 30 days of obtaining all results for each sampling event.

b. The Discharger shall provide the method detection limit when an analytical result from samples taken is reported by the laboratory as a "non-detect" or less than the method detection limit. A value of zero shall not be reported.

c. The Discharger shall provide the analytical result from samples taken that is reported by the laboratory as below the minimum level (often referred to as the reporting limit) but above the method detection limit.

Reported analytical results derived from sufficiently sensitive testing methods will be averaged automatically by SMARTS. For any calculations required by this General Permit, SMARTS will assign a value of zero (0) for all results less than the minimum level as reported by the laboratory after verifying the use of a sufficiently sensitive testing method (as evidenced by reported MDL and ML).

TABLE 1: Additional Analytical Parameters

SIC code	SIC code Description	Parameters*
102X	Copper Ores	COD; N+N
12XX	Coal Mines	Al; Fe
144X	Sand and Gravel	N+N
207X	Fats and Oils	BOD; COD; N+N
2421	Sawmills & Planning Mills	COD; Zn
2426	Hardwood Dimension	COD
2429	Special Product Sawmills	COD
243X	Millwork, Veneer, Plywood	COD
244X	Wood Containers	COD
245X	Wood Buildings & Mobile Homes	COD
2491	Wood Preserving	As; Cu
2493	Reconstituted Wood Products	COD
263X	Paperboard Mills	COD
281X	Industrial Inorganic Chemicals	Al; Fe; N+N
282X	Plastic Materials, Synthetics	Zn
284X	Soaps, Detergents, Cosmetics	N+N; Zn
287X	Fertilizers, Pesticides, etc.	Fe; N+N; Pb; Zn; P
301X	Tires, Inner Tubes	Zn
302X	Rubber and Plastic Footwear	Zn
305X	Rubber & Plastic Sealers & Hoses	Zn
306X	Misc. Fabricated Rubber Products	Zn
325X	Structural Clay Products	Al
326X	Pottery & Related Products	Al
3297	Non-Clay Refractories	Al
327X	Concrete, Gypsum, Plaster Products (Except 3274)	Fe

3295	Minerals & Earths	Fe
331X	Steel Works, Blast Furnaces, Rolling and Finishing Mills	Al; Zn
332X	Iron and Steel Foundries	Al; Cu; Fe; Zn
335X	Metal Rolling, Drawing, Extruding	Cu; Zn
336X	Nonferrous Foundries (Castings)	Cu; Zn
34XX	Fabricated Metal Products (Except 3479)	Zn; N+N; Fe; Al
3479	Coating and Engraving	Zn; N+N
4953	Hazardous Waste Facilities	NH3; Mg; COD; As; Cn; Pb; HG; Se; Ag
44XX	Water Transportation	Al; Fe; Pb; Zn
45XX	Air Transportation Facilities~~16~~17	BOD; COD; NH3
4911	Steam Electric Power Generating Facilities	Fe
4953	Landfills and Land Application Facilities	Fe
5015	Dismantling or Wrecking Yards	Fe; Pb; Al
5093	Scrap and Waste Materials (not including source-separated recycling)	Fe; Pb; Al; Zn; COD

***Table 1 Parameter Reference**	
Ag – Silver	**Mg** – Magnesium
Al – Aluminum	**N+N** - Nitrate & Nitrite Nitrogen
As – Arsenic	**NH** – Ammonia
BOD – Biochemical Oxygen Demand	**Ni** – Nickel
Cd - Cadmium	**P** – Phosphorus
Cn – Cyanide	**Se** – Selenium
COD – Chemical Oxygen Demand	**TSS** – Total Suspended Solids
Cu – Copper	**Zn** – Zinc
Fe – Iron	**Pb** – Lead
Hg – Mercury	

~~16~~17 Only airports (SIC 4512-4581) where a single Discharger, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, are required to monitor these parameters for those outfalls that collect runoff from areas where deicing activities occur.

TABLE 2: Parameter NAL Values, Test Methods, and Reporting Units

PARAMETER	TEST METHOD	REPORTING UNITS	ANNUAL NAL	INSTANTANEOUS MAXIMUM NAL
pH*	See Section XI.C.2	pH units	N/A	Less than 6.0 Greater than 9.0
Suspended Solids (TSS)*, Total	SM 2540-D	mg/L	100	400
Oil & Grease (O&G)*, Total	EPA 1664A	mg/L	15	25
Zinc, Total (H)	EPA 200.8	mg/L	0.26**	
Copper, Total (H)	EPA 200.8	mg/L	0.0332**	
Cyanide, Total	SM 4500–CN C, D, or E	mg/L	0.022	
Lead, Total (H)	EPA 200.8	mg/L	0.262**	
Chemical Oxygen Demand (COD)	SM 5220C	mg/L	120	
Aluminum, Total	EPA 200.8	mg/L	0.75	
Iron, Total	EPA 200.7	mg/L	1.0	
Nitrate + Nitrite Nitrogen	SM 4500-NO3- E	mg/L as N	0.68	
Total Phosphorus	SM 4500-P B+E	mg/L as P	2.0	
Ammonia (as N)	SM 4500-NH3 B+ C or E	mg/L	2.14	
Magnesium, total	EPA 200.7	mg/L	0.064	
Arsenic, Total (c)	EPA 200.8	mg/L	0.15	
Cadmium, Total (H)	EPA 200.8	mg/L	0.0053**	
Nickel, Total (H)	EPA 200.8	mg/l	1.02**	
Mercury, Total	EPA 245.1	mg/L	0.0014	
Selenium, Total	EPA 200.8	mg/L	0.005	
Silver, Total (H)	EPA 200.8	mg/L	0.0183**	
Biochemical Oxygen Demand (BOD)	SM 5210B	mg/L	30	

SM – Standard Methods for the Examination of Water and Wastewater, 18th edition
EPA – U.S. EPA test methods
(H) – Hardness dependent
* Minimum parameters required by this General Permit
**The NAL is the highest value used by U.S. EPA based on their hardness table in the 2008 MSGP.

C. Methods and Exceptions

1. The Discharger shall comply with the monitoring methods in this General Permit and Attachment H.

2. pH Methods

   a. Dischargers that are not subject to Subchapter N ELGs mandating pH analysis related to acidic or alkaline sources and have never entered Level 1 status for pH, are eligible to screen for pH using wide range litmus pH paper or other equivalent pH test kits. The pH screen shall be performed as soon as practicable, but no later than 15 minutes after the sample is collected.

   b. Dischargers subject to Subchapter N ELGs shall either analyze samples for pH using methods in accordance with 40 Code of Federal Regulations 136 for testing storm water or use a calibrated portable instrument for pH.

   c. Dischargers that enter Level 1 status (see Section XII.C) for pH shall, in the subsequent reporting years, analyze for pH using methods in accordance with 40 Code of Federal Regulations 136 or use a calibrated portable instrument for pH.

   d. Dischargers using a calibrated portable instrument for pH shall ensure that all field measurements are conducted in accordance with the accompanying manufacturer's instructions.

3. Alternative Discharge Locations

   a. The Discharger is required to identify, when practicable, alternative discharge locations for any discharge locations identified in accordance with Section XI.B.4 if the facility's discharge locations are:

      i. Affected by storm water run-on from surrounding areas that cannot be controlled; and/or,

      ii. Difficult to observe or sample (e.g. submerged discharge outlets, dangerous discharge location accessibility).

   b. The Discharger shall submit and certify via SMARTS any alternative discharge location or revisions to the alternative discharge locations in the Monitoring Implementation Plan.

4. Representative Sampling Reduction

   a. The Discharger may reduce the number of locations to be sampled in each drainage area (e.g., roofs with multiple downspouts, loading/unloading areas with multiple storm drains) if the industrial

activities, BMPs, and physical characteristics (grade, surface materials, etc.) of the drainage area for each location to be sampled are substantially similar to one another. To qualify for the Representative Sampling Reduction, the Discharger shall provide a Representative Sampling Reduction justification in the Monitoring Implementation Plan section of the SWPPP.

b. The Representative Sampling Reduction justification shall include:

i. Identification and description of each drainage area and corresponding discharge location(s);

ii. A description of the industrial activities that occur throughout the drainage area;

iii. A description of the BMPs implemented in the drainage area;

iv. A description of the physical characteristics of the drainage area;

v. A rationale that demonstrates that the industrial activities and physical characteristics of the drainage area(s) are substantially similar; and,

vi. An identification of the discharge location(s) selected for representative sampling, and rationale demonstrating that the selected location(s) to be sampled are representative of the discharge from the entire drainage area.

c. A Discharger that satisfies the conditions of subsection 4.b.i through v above shall submit and certify via SMARTS the revisions to the Monitoring Implementation Plan that includes the Representative Sampling Reduction justification.

d. Upon submittal of the Representative Sampling Reduction justification, the Discharger may reduce the number of locations to be sampled in accordance with the Representative Sampling Reduction justification. The Regional Water Board may reject the Representative Sampling Reduction justification and/or request additional supporting documentation. In such instances, the Discharger is ineligible for the Representative Sampling Reduction until the Regional Water Board approves the Representative Sampling Reduction justification.

5. Qualified Combined Samples

a. The Discharger may authorize an analytical laboratory to combine samples of equal volume from as many as four (4) discharge locations if the industrial activities, BMPs, and physical characteristics (grade, surface materials, etc.) within each of the drainage areas are substantially similar to one another.

b. The Qualified Combined Samples justification shall include:

i. Identification and description of each drainage area and corresponding discharge locations;

ii. A description of the BMPs implemented in the drainage area;

iii. A description of the industrial activities that occur throughout the drainage area;

iv. A description of the physical characteristics of the drainage area; and,

v. A rationale that demonstrates that the industrial activities and physical characteristics of the drainage area(s) are substantially similar.

c. A Discharger that satisfies the conditions of subsection 5.b.i through iv above shall submit and certify via SMARTS the revisions to the Monitoring Implementation Plan that includes the Qualified Combined Samples justification.

d. Upon submittal of the Qualified Combined Samples justification revisions in the Monitoring Implementation Plan, the Discharger may authorize the lab to combine samples of equal volume from as many as four (4) drainage areas. The Regional Water Board may reject the Qualified Combined Samples justification and/or request additional supporting documentation. In such instances, the Discharger is ineligible for the Qualified Combined Samples justification until the Regional Water Board approves the Qualified Combined Samples justification.

e. Regional Water Board approval is necessary to combine samples from more than four (4) discharge locations.

6. Sample Collection and Visual Observation Exceptions

a. Sample collection and visual observations are not required under the following conditions:

i. During dangerous weather conditions such as flooding or electrical storms; or,

ii. Outside of scheduled facility operating hours. The Discharger is not precluded from collecting samples or conducting visual observations outside of scheduled facility operating hours.

b. In the event that samples are not collected, or visual observations are not conducted in accordance with Section XI.B.5 due to these exceptions, an explanation shall be included in the Annual Report.

c. Sample collection is not required for drainage areas with no exposure to industrial activities and materials in accordance with the definitions in Section XVII.

7. Sampling Frequency Reduction Certification
   a. Dischargers are eligible to reduce the number of QSEs sampled each reporting year in accordance with the following requirements:

      i. Results from four (4) consecutive QSEs that were sampled (QSEs may be from different reporting years) did not exceed any NALs as defined in Section XII.A; and

      ii. The Discharger is in full compliance with the requirements of this General Permit and has updated, certified and submitted via SMARTS all documents, data, and reports required by this General Permit during the time period in which samples were collected.

   b. The Regional Water Board may notify a Discharger that it may not reduce the number of QSEs sampled each reporting year if the Discharger is subject to an enforcement action.

   c. An eligible Discharger shall certify via SMARTS that it meets the conditions in subsection 7.a above.

   d. Upon Sampling Frequency Reduction certification, the Discharger shall collect and analyze samples from one (1) QSE within the first half of each reporting year (July 1 to December 31), and one (1) QSE within the second half of each reporting year (January 1 to June 30). All other monitoring, sampling, and reporting requirements remain in effect.

   e. Dischargers who participate in a Compliance Group and certify a Sampling Frequency Reduction are only required to collect and analyze storm water samples from one (1) QSE within each reporting year.

   f. A Discharger may reduce sampling per the Sampling Frequency Reduction certification unless notified by the Regional Water Board that: (1) the Sampling Frequency Reduction certification has been rejected or (2) additional supporting documentation must be submitted. In such instances, a Discharger is ineligible for the Sampling Frequency Reduction until the Regional Water Board provides Sampling Frequency Reduction certification approval. Revised Sampling Frequency Reduction certifications shall be certified and submitted via SMARTS by the Discharger.

   g. A Discharger loses its Sampling Frequency Reduction certification if an NAL/TNAL exceedance occurs (Section XII.A).

D. Facilities Subject to Federal Storm Water Effluent Limitation Guidelines (ELGs)

1. In addition to the other requirements in this General Permit, Dischargers with facilities subject to storm water ELGs in Subchapter N shall:

   a. Collect and analyze samples from QSEs for each regulated pollutant specified in the appropriate category in Subchapter N as specified in Section XI.B;

   b. For Dischargers with facilities subject to 40 Code of Federal Regulations parts 419~~[17]~~[18] and 443~~[18]~~[19], estimate or calculate the volume of industrial storm water discharges from each drainage area subject to the ELGs and the mass of each regulated pollutant as defined in parts 419 and 443; and,

   c. Ensure that the volume/mass estimates or calculations required in subsection b are completed by a California licensed professional engineer.

2. Dischargers subject to Subchapter N shall submit the information in Section XI.D.1.a through c in their Annual Report.

3. Dischargers with facilities subject to storm water ELGs in Subchapter N are ineligible for the Representative Sampling Reduction in Section XI.C.4.

XII. EXCEEDANCE RESPONSE ACTIONS (ERAs)

A. ~~NALs and NAL Exceedances~~ Exceedance of an NAL or TNAL

The Discharger shall perform sampling, analysis and reporting in accordance with the requirements of this General Permit and shall compare the results to the two types of NAL values in Table 2 to determine whether either type of NAL has been exceeded for each applicable parameter.[20] The two types of potential NAL exceedances are as follows:

1. Annual NAL exceedance: The Discharger shall determine the average concentration for each parameter using the results of all the sampling and analytical results for the entire facility for the reporting year (i.e., all "effluent" data). The Discharger shall compare the average concentration for each parameter to the corresponding annual NAL values in Table 2. For Dischargers using composite sampling or flow-weighted measurements in accordance with standard practices, the average concentrations shall be

~~[17]~~[18] Part 419 - Petroleum refining point source category

~~[18]~~[19] Part 443 - Effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources for the paving and roofing materials (tars and asphalt) point source category

[20] TNALs are implemented as instantaneous maximum values. Annual exceedances are not applicable to TNALs.

calculated in accordance with the U.S. EPA's NPDES Storm Water Sampling Guidance Document.[~~19~~21] An annual NAL exceedance occurs when the average of all the analytical results for a parameter from samples taken within a reporting year exceeds the annual NAL value for that parameter listed in Table 2; and,

2. Instantaneous maximum NAL/TNAL exceedance: The Discharger shall compare all sampling and analytical results from each distinct sample (individual or combined as authorized by XI.C.5) to the corresponding instantaneous maximum NAL/TNAL values in Table 2. An instantaneous maximum NAL/TNAL exceedance occurs when two (2) or more analytical results from samples taken for any single parameter within a reporting year exceed the instantaneous maximum NAL/TNAL value (for TSS and O&G) or are outside of the instantaneous maximum NAL/TNAL range for pH.

B. Baseline Status

At the beginning of a Discharger's NOI Coverage, all Dischargers have Baseline status for all parameters.

C. Level 1 Status

A Discharger's Baseline status for any given parameter shall change to Level 1 status if sampling results indicate an NAL/TNAL exceedance for that same parameter. Level 1 status will commence on July 1 following the reporting year during which the exceedance(s) occurred.[~~20~~22]

1. Level 1 ERA Evaluation

   a. By October 1 following commencement of Level 1 status for any parameter with sampling results indicating an NAL/TNAL exceedance, the Discharger shall:

   b. Complete an evaluation, with the assistance of a QISP, of the industrial pollutant sources at the facility that are or may be related to the NAL/TNAL exceedance(s); and,

   c. Identify in the evaluation the corresponding BMPs in the SWPPP and any additional BMPs and SWPPP revisions necessary to prevent future NAL/TNAL exceedances and to comply with the requirements of this General Permit. Although the evaluation may focus on the drainage areas where the NAL/TNAL exceedance(s) occurred, all drainage areas shall be evaluated.

[~~19~~21] **U.S. EPA. NPDES Storm Water Sampling Guidance Document. <http://www.epa.gov/npdes/pubs/owm0093.pdf>. [as of February 4, 2014]**

[~~20~~22] For all sampling results reported before June 30th of the preceding reporting year. If sample results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status once those results have been reported.

2. Level 1 ERA Report

   a. Based upon the above evaluation, the Discharger shall, as soon as practicable but no later than January 1 following commencement of Level 1 status :

      i. Revise the SWPPP as necessary and implement any additional BMPs identified in the evaluation;

      ii. Certify and submit via SMARTS a Level 1 ERA Report prepared by a QISP that includes the following:

         1) A summary of the Level 1 ERA Evaluation required in subsection C.1 above; and,

         2) A detailed description of the SWPPP revisions and any additional BMPs for each parameter that exceeded an NAL/TNAL.

      iii. Certify and submit via SMARTS the QISP's identification number, name, and contact information (telephone number, e-mail address).

   b. A Discharger's Level 1 status for a parameter will return to Baseline status once a Level 1 ERA report has been completed, all identified additional BMPs have been implemented, and results from four (4) consecutive QSEs that were sampled subsequent to BMP implementation indicate no additional NAL/TNAL exceedances for that parameter.

3. NAL/TNAL Exceedances Prior to Implementation of Level 1 Status BMPs.

   Prior to the implementation of an additional BMP identified in the Level 1 ERA Evaluation or October 1, whichever comes first, sampling results for any parameter(s) being addressed by that additional BMP will not be included in the calculations of annual average or instantaneous NAL/TNAL exceedances in SMARTS.

D. Level 2 Status

A Discharger's Level 1 status for any given parameter shall change to Level 2 status if sampling results indicate an NAL/TNAL exceedance for that same parameter while the Discharger is in Level 1. Level 2 status will commence on

July 1 following the reporting year during which the NAL/TNAL exceedance(s) occurred.[21][23]

1. Level 2 ERA Action Plan

   a. Dischargers with Level 2 status shall certify and submit via SMARTS a Level 2 ERA Action Plan prepared by a QISP that addresses each new Level 2 NAL/TNAL exceedance by January 1 following the reporting year during which the NAL/TNAL exceedance(s) occurred. For each new Level 2 NAL/TNAL exceedance, the Level 2 Action Plan will identify which of the demonstrations in subsection D.2.a through c the Discharger has selected to perform. A new Level 2 NAL/TNAL exceedance is any Level 2 NAL/TNAL exceedance for 1) a new parameter in any drainage area, or 2) the same parameter that is being addressed in an existing Level 2 ERA Action Plan in a different drainage area.

   b. The Discharger shall certify and submit via SMARTS the QISP's identification number, name, and contact information (telephone number, e-mail address) if this information has changed since previous certifications.

   c. The Level 2 ERA Action Plan shall at a minimum address the drainage areas with corresponding Level 2 NAL/TNAL exceedances.

   d. All elements of the Level 2 ERA Action Plan shall be implemented as soon as practicable and completed no later than 1 year after submitting the Level 2 ERA Action Plan.

   e. The Level 2 ERA Action Plan shall include a schedule and a detailed description of the tasks required to complete the Discharger's selected demonstration(s) as described below in Section D.2.a through c.

2. Level 2 ERA Technical Report

   On January 1 of the reporting year following the submittal of the Level 2 ERA Action Plan, a Discharger with Level 2 status shall certify and submit a Level 2 ERA Technical Report prepared by a QISP that includes one or more of the following demonstrations:

[21][23] For all sampling results reported before June 30th of the preceding reporting year. If sample results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status upon the date those results have been reported into SMARTS.

a. Industrial Activity BMPs Demonstration

This shall include the following requirements, as applicable:

i. Shall include a description of the industrial pollutant sources and corresponding industrial pollutants that are or may be related to the NAL/TNAL exceedance(s);

ii. Shall include an evaluation of all pollutant sources associated with industrial activity that are or may be related to the NAL/TNAL exceedance(s);

iii. Where all of the Discharger's implemented BMPs, including additional BMPs identified in the Level 2 ERA Action Plan, achieve compliance with the effluent limitations of this General Permit and are expected to eliminate future NAL/TNAL exceedance(s), the Discharger shall provide a description and analysis of all implemented BMPs;

iv. In cases where all of the Discharger's implemented BMPs, including additional BMPs identified in the Level 2 ERA Action Plan, achieve compliance with the effluent limitations of this General Permit but are not expected to eliminate future NAL/TNAL exceedance(s), the Discharger shall provide, in addition to a description and analysis of all implemented BMPs:

1) An evaluation of any additional BMPs that would reduce or prevent NAL/TNAL exceedances;

2) Estimated costs of the additional BMPs evaluated; and,

3) An analysis describing the basis for the selection of BMPs implemented in lieu of the additional BMPs evaluated but not implemented.

v. The description and analysis of BMPs required in subsection a.iii above shall specifically address the drainage areas where the NAL/TNAL exceedance(s) responsible for the Discharger's Level 2 status occurred, although any additional Level 2 ERA Action Plan BMPs may be implemented for all drainage areas; and,

vi. If an alternative design storm standard for treatment control BMPs (in lieu of the design storm standard for treatment control BMPs in Section X.H.6 in this General Permit) will achieve compliance with the effluent limitations of this General Permit, the Discharger shall provide an analysis describing the basis for the selection of the alternative design storm standard.

b. Non-Industrial Pollutant Source Demonstration

This shall include:

i. A statement that the Discharger has determined that the exceedance of the NAL/TNAL is attributable solely to the presence of non-industrial pollutant sources. (The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL/TNAL exceedance.) The sources shall be identified as either run-on from adjacent properties, aerial deposition from man-made sources, or as generated by on-site non-industrial sources;

ii. A statement that the Discharger has identified and evaluated all potential pollutant sources that may have commingled with storm water associated with the Discharger's industrial activity and may be contributing to the NAL/TNAL exceedance;

iii. A description of any on-site industrial pollutant sources and corresponding industrial pollutants that are contributing to the NAL/TNAL exceedance;

iv. An assessment of the relative contributions of the pollutant from (1) storm water run-on to the facility from adjacent properties or non-industrial portions of the Discharger's property or from aerial deposition and (2) the storm water associated with the Discharger's industrial activity;

v. A summary of all existing BMPs for that parameter; and,

vi. An evaluation of all on-site/off-site analytical monitoring data demonstrating that the NAL/TNAL exceedances are caused by pollutants in storm water run-on to the facility from adjacent properties or non-industrial portions of the Discharger's property or from aerial deposition.

c. Natural Background Pollutant Source Demonstration

This shall include:

i. A statement that the Discharger has determined that the NAL/TNAL exceedance is attributable solely to the presence of the pollutant in the natural background that has not been disturbed by industrial activities. (The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL/TNAL exceedance);

ii. A summary of all data previously collected by the Discharger, or other identified data collectors, that describes the levels of natural background pollutants in the storm water discharge;

iii. A summary of any research and published literature that relates the pollutants evaluated at the facility as part of the Natural Background Source Demonstration;

iv. Map showing the reference site location in relation to facility along with available land cover information;

v. Reference site and test site elevation;

vi. Available geology and soil information for reference and test sites;

vii. Photographs showing site vegetation;

viii. Site reconnaissance survey data regarding presence of roads, outfalls, or other human-made structures; and,

ix. Records from relevant state or federal agencies indicating no known mining, forestry, or other human activities upstream of the proposed reference site.

3. Level 2 ERA Technical Report Submittal

a. The Discharger shall certify and submit via SMARTS the Level 2 ERA Technical Report described in Section D.2 above.

b. The State Water Board and Regional Boards (Water Boards) may review the submitted Level 2 ERA Technical Reports. Upon review of a Level 2 ERA Technical Report, the Water Boards may reject the Level 2 ERA Technical Report and direct the Discharger to take further action(s) to comply with this General Permit.

c. Dischargers with Level 2 status who have submitted the Level 2 ERA Technical Report are only required to annually update the Level 2 ERA Technical Report based upon additional NAL/TNAL exceedances of the same parameter and same drainage area (if the original Level 2 ERA Technical Report contained an Industrial Activity BMP Demonstration and the implemented BMPs were expected to eliminate future NAL/TNAL exceedances in accordance with Section XII.D.2.a.ii), facility operational changes, pollutant source(s) changes, and/or information that becomes available via compliance activities (monthly visual observations, sampling results, annual evaluation, etc.). The Level 2 ERA Technical Report shall be prepared by a QISP and be certified and submitted via SMARTS by the Discharger with each Annual Report. If

there are no changes prompting an update of the Level 2 ERA Technical Report, as specified above, the Discharger will provide this certification in the Annual Report that there have been no changes warranting re-submittal of the Level 2 ERA Technical Report.

d. Dischargers are not precluded from submitting a Level 2 ERA Action Plan or ERA Technical Report prior to entering Level 2 status if information is available to adequately prepare the report and perform the demonstrations described above. A Discharger who chooses to submit a Level 2 ERA Action Plan or ERA Technical Report prior to entering Level 2 status will automatically be placed in Level 2 in accordance to the Level 2 ERA schedule.

4. Eligibility for Returning to Baseline Status

a. Dischargers with Level 2 status who submit an Industrial Activity BMPs Demonstration in accordance with subsection 2.a.i through iii above and have implemented BMPs to prevent future NAL/TNAL exceedance(s) for the Level 2 parameter(s) shall return to baseline status for that parameter, if results from four (4) subsequent consecutive QSEs sampled indicate no additional NAL/TNAL exceedance(s) for that parameter(s). If future NAL/TNAL exceedances occur for the same parameter(s), the Discharger's Baseline status will return to Level 2 status on July 1 in the subsequent reporting year during which the NAL/TNAL exceedance(s) occurred. These Dischargers shall update the Level 2 ERA Technical Report as required above in Section D.3.c.

b. Dischargers are ineligible to return to baseline status if they submit any of the following:

i. A industrial activity BMP demonstration in accordance with subsection 2.a.iv above;

ii. An non-industrial pollutant source demonstration; or,

iii. A natural background pollutant source demonstration.

5. Level 2 ERA Implementation Extension

a. Dischargers that need additional time to submit the Level 2 ERA Technical Report shall be automatically granted a single time extension for up to six (6) months upon submitting the following items into SMARTS, as applicable:

i. Reasons for the time extension;

ii. A revised Level 2 ERA Action Plan including a schedule and a detailed description of the necessary tasks still to be performed to complete the Level 2 ERA Technical Report; and

iii. A description of any additional temporary BMPs that will be implemented while permanent BMPs are being constructed.

b. The Regional Water Boards will review Level 2 ERA Implementation Extensions for completeness and adequacy. Requests for extensions that total more than six (6) months are not granted unless approved in writing by the Water Boards. The Water Boards may (1) reject or revise the time allowed to complete Level 2 ERA Implementation Extensions, (2) identify additional tasks necessary to complete the Level 2 ERA Technical Report, and/or (3) require the Discharger to implement additional temporary BMPs.

XIII. INACTIVE MINING OPERATION CERTIFICATION

A. Inactive mining operations are defined in Part 3 of Attachment A of this General Permit. The Discharger may, in lieu of complying with the General Permit requirements described in subsection B below, certify and submit via SMARTS that their inactive mining operation meets the following conditions:

1. The Discharger has determined and justified in the SWPPP that it is impracticable to implement the monitoring requirements in this General Permit for the inactive mining operation;

2. A SWPPP has been signed (wet signature and license number) by a California licensed professional engineer and is being implemented in accordance with the requirements of this General Permit; and,

3. The facility is in compliance with this General Permit, except as provided in subsection B below.

B. The Discharger who has certified and submitted that they meet the conditions in subsection A above, are not subject to the following General Permit requirements:

1. Monitoring Implementation Plan in Section X.I;

2. Monitoring Requirements in Section XI;

3. Exceedance Response Actions (ERAs) in Section XII; and,

4. Annual Report Requirements in Section XVI.

C. Inactive Mining Operation Certification Submittal Schedule

1. The Discharger shall certify and submit via SMARTS NOI coverage PRDs listed in Section II.B.1 and meet the conditions in subsection A above.

2. The Discharger shall annually inspect the inactive mining site and certify via SMARTS no later than July 15th of each reporting year, that their inactive mining operation continues to meet the conditions in subsection A above.

3. The Discharger shall have a California licensed professional engineer review and update the SWPPP if there are changes to their inactive mining operation or additional BMPs are needed to comply with this General Permit. Any significant updates to the SWPPP shall be signed (wet signature and license number) by a California license professional engineer.

4. The Discharger shall certify and submit via SMARTS any significantly revised SWPPP within 30 days of the revision(s).

XIV. COMPLIANCE GROUPS AND COMPLIANCE GROUP LEADERS

A. Compliance Group Qualification Requirements

1. Any group of Dischargers of the same industry type or any QISP representing Dischargers of the same industry type may form a Compliance Group. A Compliance Group shall consist of Dischargers that operate facilities with similar types of industrial activities, pollutant sources, and pollutant characteristics (e.g., scrap metals recyclers would join a different group than paper recyclers, truck vehicle maintenance facilities would join a different group than airplane vehicle maintenance facilities, etc.). A Discharger participating in a Compliance Group is termed a Compliance Group Participant. Participation in a Compliance Group is not required. Compliance Groups may be formed at any time.

2. Each Compliance Group shall have a Compliance Group Leader.

3. To establish a Compliance Group, the Compliance Group Leader shall register as a Compliance Group Leader via SMARTS. The registration shall include documentation demonstrating compliance with the Compliance Group qualification requirements above and a list of the Compliance Group Participants.

4. Each Compliance Group Participant shall register as a member of an established Compliance Group via SMARTS.

5. The Executive Director of the State Water Board may review Compliance Group registrations and/or activities for compliance with the requirements of this General Permit. The Executive Director may reject the Compliance Group, the Compliance Group Leader, or individual Compliance Group Participants within the Compliance Group.

B. Compliance Group Leader Responsibilities

1. A Compliance Group Leader must complete a State Water Board sponsored or approved training program for Compliance Group Leaders.

2. The Compliance Group Leader shall assist Compliance Group Participants with all compliance activities required by this General Permit.

3. A Compliance Group Leader shall prepare a Consolidated Level 1 ERA Report for all Compliance Group Participants with Level 1 status for the same parameter. Compliance Group Participants who certify and submit these Consolidated Level 1 ERA Reports are subject to the same provisions as individual Dischargers with Level 1 status, as described in Section XII.C. A Consolidated Level 1 ERA Report is equivalent to a Level 1 ERA Report.

4. The Compliance Group Leader shall update the Consolidated Level 1 ERA Report as needed to address additional Compliance Group Participants with ERA Level 1 status.

5. A Compliance Group Leader shall prepare a Level 2 ERA Action Plan specific to each Compliance Group Participant with Level 2 status. Compliance Group Participants who certify and submit these Level 2 ERA Action Plans are subject to the same provisions as individual Dischargers with Level 2 status, as described in Section XII.D.

6. A Compliance Group Leader shall prepare a Level 2 ERA Technical Report specific to each Compliance Group Participant with Level 2 status. Compliance Group Participants who certify and submit these Level 2 ERA Technical Reports are subject to the same provisions as individual Dischargers with Level 2 status, as described in Section XII.D.

7. The Compliance Group Leader shall inspect all the facilities of the Compliance Group Participants that have entered Level 2 status prior to preparing the individual Level 2 ERA Technical Report.

8. The Compliance Group Leader shall revise the Consolidated Level 1 ERA Report, individual Level 2 ERA Action Plans, or individual Level 2 Technical Reports in accordance with any comments received from the Water Boards.

9. The Compliance Group Leader shall inspect all the facilities of the Compliance Group Participants at a minimum of once per reporting year (July 1 to June 30).

C. Compliance Group Participant Responsibilities

1. Each Compliance Group Participant is responsible for permit compliance for the Compliance Group Participant's facility and for ensuring that the Compliance Group Leader's activities related to the Compliance Group Participant's facility comply with this General Permit.

2. Compliance Group Participants with Level 1 status shall certify and submit via SMARTS the Consolidated Level 1 ERA Report. The Compliance Group Participants shall certify that they have reviewed the Consolidated Level 1 ERA Report and have implemented any required additional BMPs. Alternatively, the Compliance Group Participant may submit an individual Level 1 ERA Report in accordance with the provisions in Section XII.C.2.

3. Compliance Group Participants with Level 2 status shall certify and submit via SMARTS their individual Level 2 ERA Action Plan and Technical Report prepared by their Compliance Group Leader. Each Compliance Group Participant shall certify that they have reviewed the Level 2 ERA Action Plan and Technical Report and will implement any required additional BMPs.

4. Compliance Group Participants can at any time discontinue their participation in their associated Compliance Group via SMARTS. Upon discontinuation, the former Compliance Group Participant is immediately subject to the sampling and analysis requirements described in Section XI.B.2.

XV. ANNUAL COMPREHENSIVE FACILITY COMPLIANCE EVALUATION (ANNUAL EVALUATION)

The Discharger shall conduct one Annual Evaluation for each reporting year (July 1 to June 30). If the Discharger conducts an Annual Evaluation fewer than eight (8) months, or more than sixteen (16) months, after it conducts the previous Annual Evaluation, it shall document the justification for doing so. The Discharger shall revise the SWPPP, as appropriate, and implement the revisions within 90 days of the Annual Evaluation. At a minimum, Annual Evaluations shall consist of:

A. A review of all sampling, visual observation, and inspection records conducted during the previous reporting year;

B. An inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the storm water conveyance system;

C. An inspection of all drainage areas previously identified as having no exposure to industrial activities and materials in accordance with the definitions in Section XVII;

D. An inspection of equipment needed to implement the BMPs;

E. An inspection of any BMPs;

F. A review and effectiveness assessment of all BMPs for each area of industrial activity and associated potential pollutant sources to determine if the BMPs are properly designed, implemented, and are effective in reducing and preventing pollutants in industrial storm water discharges and authorized NSWDs; and,

G. An assessment of any other factors needed to comply with the requirements in Section XVI.B.

XVI. ANNUAL REPORT

A. The Discharger shall certify and submit via SMARTS an Annual Report no later than July 15th following each reporting year using the standardized format and checklists in SMARTS.

B. The Discharger shall include in the Annual Report:

1. A Compliance Checklist that indicates whether a Discharger complies with, and has addressed all applicable requirements of this General Permit;

2. An explanation for any non-compliance of requirements within the reporting year, as indicated in the Compliance Checklist;

3. An identification, including page numbers and/or sections, of all revisions made to the SWPPP within the reporting year; and,

4. The date(s) of the Annual Evaluation.

XVII. CONDITIONAL EXCLUSION - NO EXPOSURE CERTIFICATION (NEC)

A. Discharges composed entirely of storm water that has not been exposed to industrial activity are not industrial storm water discharges. Dischargers are conditionally excluded from complying with the SWPPP and monitoring requirements of this General Permit if all of the following conditions are met:

1. There is no exposure of Industrial Materials and Activities to rain, snow, snowmelt, and/or runoff;

2. All unauthorized NSWDs have been eliminated and all authorized NSWDs meet the conditions of Section IV;

3. The Discharger has certified and submitted via SMARTS PRDs for NEC coverage pursuant to the instructions in Section II.B.2; and,

4. The Discharger has satisfied all other requirements of this Section.

B. NEC Specific Definitions

1. No Exposure - all Industrial Materials and Activities are protected by a Storm-Resistant Shelter to prevent all exposure to rain, snow, snowmelt, and/or runoff.

2. Industrial Materials and Activities - includes, but is not limited to, industrial material handling activities or equipment, machinery, raw materials, intermediate products, by-products, final products, and waste products.

3. Material Handling Activities - includes the storage, loading and unloading, transportation, or conveyance of any industrial raw material, intermediate product, final product, or waste product.

4. Sealed - banded or otherwise secured, and without operational taps or valves.

5. Storm-Resistant Shelters - includes completely roofed and walled buildings or structures. Also includes structures with only a top cover supported by permanent supports but with no side coverings, provided material within the structure is not subject to wind dispersion (sawdust, powders, etc.), or track-out, and there is no storm water discharged from within the structure that comes into contact with any materials.

C. NEC Qualifications

To qualify for an NEC, a Discharger shall:

1. Except as provided in subsection D below, provide a Storm-Resistant Shelter to protect Industrial Materials and Activities from exposure to rain, snow, snowmelt, run-on, and runoff;

2. Inspect and evaluate the facility annually to determine that storm water exposed to industrial materials or equipment has not and will not be discharged to waters of the United States. Evaluation records shall be maintained for five (5) years in accordance with Section XXI.J.4;

3. Register for NEC coverage by certifying that there are no discharges of storm water contaminated by exposure to Industrial Materials and Activities from areas of the facility subject to this General Permit, and certify that all unauthorized NSWDs have been eliminated and all authorized NSWDs meet the conditions of Section IV (Authorized NSWDs). NEC coverage and annual renewal requires payment of an annual fee in accordance with California Code of Regulations, title 23, section 2200 et seq.; and,

4. Submit PRDs for NEC coverage shall be prepared and submitted in accordance with the:

   a. Certification requirements in Section XXI.K; and,

   b. Submittal schedule in accordance with Section II.B.2.

D. NEC Industrial Materials and Activities - Storm-Resistant Shelter Not Required

To qualify for NEC coverage, a Storm-Resistant Shelter is not required for the following:

1. Drums, barrels, tanks, and similar containers that are tightly Sealed, provided those containers are not deteriorated, do not contain residual industrial materials on the outside surfaces, and do not leak;

2. Adequately maintained vehicles used in material handling;

3. Final products, other than products that would be mobilized in storm water discharge (e.g., rock salt);

4. Any Industrial Materials and Activities that are protected by a temporary shelter for a period of no more than ninety (90) days due to facility construction or remodeling; and,

5. Any Industrial Materials and Activities that are protected within a secondary containment structure that will not discharge storm water to waters of the United States.

E. NEC Limitations

1. NEC coverage is available on a facility-wide basis only, not for individual outfalls. If a facility has industrial storm water discharges from one or more drainage areas that require NOI coverage, Dischargers shall register for NOI coverage for the entire facility through SMARTS in accordance with Section II.B.2. Any drainage areas on that facility that would otherwise qualify for NEC coverage may be specially addressed in the facility SWPPP by including an NEC Checklist and a certification statement demonstrating that those drainage areas of the facility have been evaluated; and that none of the Industrial Materials or Activities listed in subsection C above are, or will be in the foreseeable future, exposed to precipitation.

2. If circumstances change and Industrial Materials and Activities become exposed to rain, snow, snowmelt, and/or runoff, the conditions for this exclusion shall no longer apply. In such cases, the Discharger may be subject to enforcement for discharging without a permit. A Discharger with NEC coverage that anticipates changes in circumstances should register for NOI coverage at least seven (7) days before anticipated exposure.

3. The Regional Water Board may deny NEC coverage and require NOI coverage upon determining that:

   a. Storm water is exposed to Industrial Materials and Activities; and/or

   b. The discharge has a reasonable potential to cause or contribute to an exceedance of an applicable water quality standards.

F. NEC Permit Registration Documents Required for Initial NEC Coverage

A Discharger shall submit via SMARTS the following PRDs for NEC coverage to document the applicability of the conditional exclusion:

1. The NEC form, which includes:

   a. The legal name, postal address, telephone number, and e-mail address of the Discharger;

   b. The facility business name and physical mailing address, the county name, and a description of the facility location if the facility does not have a physical mailing address; and,

   c. Certification by the Discharger that all PRDs submitted are correct and true and the conditions of no exposure have been met.

2. An NEC Checklist prepared by the Discharger demonstrating that the facility has been evaluated; and that none of the following industrial materials or activities are, or will be in the foreseeable future, exposed to precipitation:

   a. Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed;

   b. Materials or residuals on the ground or in storm water inlets from spills/leaks;

   c. Materials or products from past industrial activity;

   d. Material handling equipment (except adequately maintained vehicles);

   e. Materials or products during loading/unloading or transporting activities;

   f. Materials or products stored outdoors (except final products intended for outside use, e.g., new cars, where exposure to storm water does not result in the discharge of pollutants);

   g. Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;

   h. Materials or products handled/stored on roads or railways owned or maintained by the Discharger;

   i. Waste material (except waste in covered, non-leaking containers, e.g., dumpsters);

   j. Application or disposal of processed wastewater (unless already covered by an NPDES permit); and,

k. Particulate matter or visible deposits of residuals from roof stacks/vents evident in the storm water outflow.

3. Site Map (see Section X.E).

G. Requirements for Annual NEC Coverage Recertification

By October 1 of each reporting year beginning in 2015, any Discharger who has previously registered for NEC coverage shall either submit and certify an NEC demonstrating that the facility has been evaluated, and that none of the Industrial Materials or Activities listed above are, or will be in the foreseeable future, exposed to precipitation, or apply for NOI coverage.

H. NEC Certification Statement

All NEC certifications and re-certifications shall include the following certification statement:

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of 'no exposure' and obtaining an exclusion from NPDES storm water permitting; and that there are no discharges of storm water contaminated by exposure to industrial activities or materials from the industrial facility identified in this document (except as allowed in subsection C above). I understand that I am obligated to submit a no exposure certification form annually to the State Water Board and, if requested, to the operator of the local Municipal Separate Storm Sewer System (MS4) into which this facility discharges (where applicable). I understand that I must allow the Water Board staff, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under an NPDES permit prior to any point source discharge of storm water from the facility. 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 gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly involved in gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

XVIII. SPECIAL REQUIREMENTS - PLASTIC MATERIALS

A. Facilities covered under this General Permit that handle Plastic Materials are required to implement BMPs to eliminate discharges of plastic in storm water in addition to the other requirements of this General Permit that are applicable to all other Industrial Materials and Activities. Plastic Materials are virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind,

dust, and other similar types of preproduction plastics with the potential to discharge or migrate off-site. Any Dischargers' facility handling Plastic Materials will be referred to as Plastics Facilities in this General Permit. Any Plastics Facility covered under this General Permit that manufactures, transports, stores, or consumes these materials shall submit information to the State Water Board in their PRDs, including the type and form of plastics, and which BMPs are implemented at the facility to prevent illicit discharges. Pursuant to Water Code section 13367, Plastics Facilities are subject to mandatory, minimum BMPs.

1. At a minimum, Plastics Facilities shall implement and include in the SWPPP:

    a. Containment systems at each on-site storm drain discharge location down gradient of areas containing plastic material. The containment system shall be designed to trap all particles retained by a 1mm mesh screen, with a treatment capacity of no less than the peak flow rate from a one-year, one-hour storm.

    b. When a containment system is infeasible, or poses the potential to cause an illicit discharge, the facility may propose a technically feasible alternative BMP or suite of BMPs. The alternative BMPs shall be designed to achieve the same or better performance standard as a 1mm mesh screen with a treatment capacity of the peak flow rate from a one-year, one-hour storm. Alternative BMPs shall be submitted to the Regional Water Board for approval.

    c. Plastics Facilities shall use durable sealed containers designed not to rupture under typical loading and unloading activities at all points of plastic transfer and storage.

    d. Plastics Facilities shall use capture devices as a form of secondary containment during transfers, loading, or unloading Plastic Materials. Examples of capture devices for secondary containment include, but are not limited to catch pans, tarps, berms or any other device that collects errant material.

    e. Plastics Facilities shall have a vacuum or vacuum-type system for quick cleanup of fugitive plastic material available for employees.

    f. Pursuant to Water Code section 13367(e)(1), Plastics Facilities that handle Plastic Materials smaller than 1mm in size shall develop a containment system designed to trap the smallest plastic material handled at the facility with a treatment capacity of at least the peak flow rate from a one-year, one-hour storm, or develop a feasible alternative BMP or suite of BMPs that are designed to achieve a similar or better performance standard that shall be submitted to the Regional Water Board for approval.

2. Plastics Facilities are exempt from the Water Code requirement to install a containment system under section 13367 of the Water Code if they meet one of the following requirements that are determined to be equal to, or exceed the performance requirements of a containment system:

    a. The Discharger has certified and submitted via SMARTS a valid No Exposure Certification (NEC) in accordance with Section XVII; or

    b. Plastics Facilities are exempt from installing a containment system, if the following suite of eight (8) BMPs is implemented. This combination of BMPs is considered to reduce or prevent the discharge of plastics at a performance level equivalent to or better than the 1mm mesh and flow standard in Water Code section 13367(e)(1).

        i. Plastics Facilities shall annually train employees handling Plastic Materials. Training shall include environmental hazards of plastic discharges, employee responsibility for corrective actions to prevent errant Plastic Materials, and standard procedures for containing, cleaning, and disposing of errant Plastic Materials.

        ii. Plastics Facilities shall immediately fix any Plastic Materials containers that are punctured or leaking and shall clean up any errant material in a timely manner.

        iii. Plastics Facilities shall manage outdoor waste disposal of Plastic Materials in a manner that prevents the materials from leaking from waste disposal containers or during waste hauling.

        iv. Plastics Facilities that operate outdoor conveyance systems for Plastic Materials shall maintain the system in good operating condition. The system shall be sealed or filtered in such a way as to prevent the escape of materials when in operation. When not in operation, all connection points shall be sealed, capped, or filtered so as to not allow material to escape. Employees operating the conveyance system shall be trained how to operate in a manner that prevents the loss of materials such as secondary containment, immediate spill response, and checks to ensure the system is empty during connection changes.

        v. Plastics Facilities that maintain outdoor storage of Plastic Materials shall do so in a durable, permanent structure that prevents exposure to weather that could cause the material to migrate or discharge in storm water.

        vi. Plastics Facilities shall maintain a schedule for regular housekeeping and routine inspection for errant Plastic Materials. The Plastics Facility shall ensure that their employees follow the schedule.

vii. PRDs shall include the housekeeping and routine inspection schedule, spill response and prevention procedures, and employee training materials regarding plastic material handling.

viii. Plastics Facilities shall correct any deficiencies in the employment of the above BMPs that result in errant Plastic Materials that may discharge or migrate off-site in a timely manner. Any Plastic Materials that are discharged or that migrate off-site constitute an illicit discharge in violation of this General Permit.

XIX. REGIONAL WATER BOARD AUTHORITIES

A. The Regional Water Boards may review a Discharger's PRDs for NOI or NEC coverage and administratively reject General Permit coverage if the PRDs are deemed incomplete. The Regional Water Boards may take actions that include rescinding General Permit coverage, requiring a Discharger to revise and re-submit their PRDs (certified and submitted by the Discharger) within a specified time period, requiring the Discharger to apply for different General Permit coverage or a different individual or general permit, or taking no action.

B. The Regional Water Boards have the authority to enforce the provisions and requirements of this General Permit. This includes, but is not limited to, reviewing SWPPPs, Monitoring Implementation Plans, ERA Reports, and Annual Reports, conducting compliance inspections, and taking enforcement actions.

C. As appropriate, the Regional Water Boards may issue NPDES storm water general or individual permits to a Discharger, categories of Dischargers, or Dischargers within a watershed or geographic area. Upon issuance of such NPDES permits, this General Permit shall no longer regulate the affected Discharger(s).

D. The Regional Water Boards may require a Discharger to revise its SWPPP, ERA Reports, or monitoring programs to achieve compliance with this General Permit. In this case, the Discharger shall implement these revisions in accordance with a schedule provided by the Regional Water Board.

E. The Regional Water Boards may approve requests from a Discharger to include co-located, but discontiguous, industrial activities within the same facility under a single NOI or NEC coverage.

F. Consistent with 40 Code of Federal Regulations section 122.26(a)(9)(i)(D), the Regional Water Boards may require any discharge that is not regulated by this General Permit, that is determined to contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States, to be covered under this General Permit as appropriate. Upon designation, the Discharger responsible for the discharge shall obtain coverage under this General Permit.

G. The Regional Water Boards may review a Discharger's Inactive Mining Operation Certification and reject it at any time if the Regional Water Board determines that access to the facility for monitoring purposes is practicable or that the facility is not in compliance with the applicable requirements of this General Permit.

H. The Regional Water Boards may require a Discharger to implement additional measures including, but not limited to, assigning a QISP to re-evaluate the facility's pollutant source assessment to ensure compliance with TMDL-related requirements in this General Permit.

I. ~~**H.**~~ All Regional Water Board actions that modify a Discharger's obligations under this General Permit must be in writing and should also be submitted in SMARTS.

XX. SPECIAL CONDITIONS

A. Reopener Clause

This General Permit may be reopened and amended to incorporate TMDL-related provisions. This General Permit may also be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, water quality control plans or water quality control policies, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations sections 122.62, 122.63, 122.64, and 124.5.

B. Water Quality Based Corrective Actions

1. Upon determination by the Discharger or written notification by the Regional Water Board that industrial storm water discharges and/or authorized NSWDs contain pollutants that are in violation of Receiving Water Limitations (Section VI), the Discharger shall:

    a. Conduct a facility evaluation to identify pollutant source(s) within the facility that are associated with industrial activity and whether the BMPs described in the SWPPP have been properly implemented;

    b. Assess the facility's SWPPP and its implementation to determine whether additional BMPs or SWPPP implementation measures are necessary to reduce or prevent pollutants in industrial storm water discharges to meet the Receiving Water Limitations (Section VI); and,

    c. Certify and submit via SMARTS documentation based upon the above facility evaluation and assessment that:

        i. Additional BMPs and/or SWPPP implementation measures have been identified and included in the SWPPP to meet the Receiving Water Limitations (Section VI); or

ii. No additional BMPs or SWPPP implementation measures are required to reduce or prevent pollutants in industrial storm water discharges to meet the Receiving Water Limitations (Section VI).

2. The Regional Water Board may reject the Dischargers water quality based corrective actions and/or request additional supporting documentation.

C. Requirements for Dischargers Claiming "No Discharge" through the Notice of Non-Applicability (NONA)

1. For the purpose of the NONA, the Entity (Entities) is referring to the person(s) defined in section 13399.30 of the Water Code.

2. Entities who are claiming "No Discharge" through the NONA shall meet the following eligibility requirements:

   a. The facility is engineered and constructed to have contained the maximum historic precipitation event (or series of events) using the precipitation data collected from the National Oceanic and Atmospheric Agency's website (or other nearby precipitation data available from other government agencies) so that there will be no discharge of industrial storm water to waters of the United States; or,

   b. The facility is located in basins or other physical locations that are not hydrologically connected to waters of the United States.

3. When claiming the "No Discharge" option, Entities shall submit and certify via SMARTS both the NONA and a No Discharge Technical Report. The No Discharge Technical Report shall demonstrate the facility meets the eligibility requirements described above.

4. The No Discharge Technical Report shall be signed (wet signature and license number) by a California licensed professional engineer.

XXI. STANDARD CONDITIONS

A. Duty to Comply

Dischargers shall comply with all standard conditions in this General Permit. Permit noncompliance constitutes a violation of the Clean Water Act and the Water Code and is grounds for enforcement action and/or removal from General Permit coverage.

Dischargers shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions.

B. Duty to Reapply

Dischargers that wish to continue an activity regulated under this General Permit after the expiration date of this General Permit shall apply for and obtain authorization from the Water Boards as required by the new general permit once it is issued.

C. General Permit Actions

1. This General Permit may be modified, revoked and reissued, or terminated for cause. Submittal of a request by the Discharger for General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not annul any General Permit condition.

2. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge, and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition.

D. Need to Halt or Reduce Activity Not a Defense

In an enforcement action, it shall not be a defense for a Discharger that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

E. Duty to Mitigate

Dischargers shall take all responsible steps to reduce or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

F. Proper Operation and Maintenance

Dischargers shall at all times properly operate and maintain any facilities and systems of treatment and control (and related equipment and apparatuses) which are installed or used by the Discharger to achieve compliance with the conditions of this General Permit. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a Discharger when necessary to achieve compliance with the conditions of this General Permit.

G. Property Rights

This General Permit does not convey any property rights of any sort or any exclusive privileges. It also does not authorize any injury to private property or

any invasion of personal rights, nor does it authorize any infringement of federal, state, or local laws and regulations.

H. Duty to Provide Information

Upon request by the relevant agency, Dischargers shall provide information to determine compliance with this General Permit to the Water Boards, U.S. EPA, or local Municipal Separate Storm Sewer System (MS4) within a reasonable time. Dischargers shall also furnish, upon request by the relevant agency, copies of records that are required to be kept by this General Permit.

I. Inspection and Entry

Dischargers shall allow the Water Boards, U.S. EPA, and local MS4 (including any authorized contractor acting as their representative), to:

1. Enter upon the premises at reasonable times where a regulated industrial activity is being conducted or where records are kept under the conditions of this General Permit;

2. Access and copy at reasonable times any records that must be kept under the conditions of this General Permit;

3. Inspect the facility at reasonable times; and,

4. Sample or monitor at reasonable times for the purpose of ensuring General Permit compliance.

J. Monitoring and Records

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. If Dischargers monitor any pollutant more frequently than required, the results of such monitoring shall be included in the calculation and reporting of the data submitted.

3. Records of monitoring information shall include:

   a. The date, exact location, and time of sampling or measurement;

   b. The date(s) analyses were performed;

   c. The individual(s) that performed the analyses;

   d. The analytical techniques or methods used; and,

   e. The results of such analyses.

4. Dischargers shall retain, for a period of at least five (5) years, either a paper or electronic copy of all storm water monitoring information, records, data,

and reports required by this General Permit. Copies shall be available for review by the Water Board's staff at the facility during scheduled facility operating hours.

5. Upon written request by U.S. EPA or the local MS4, Dischargers shall provide paper or electronic copies of Annual Reports or other requested records to the Water Boards, U.S. EPA, or local MS4 within ten (10) days from receipt of the request.

K. Electronic Signature and Certification Requirements

1. All Permit Registration Documents (PRDs) for NOI and NEC coverage shall be certified and submitted via SMARTS by the Discharger's Legally Responsible Person (LRP). All other documents may be certified and submitted via SMARTS by the LRP or by their designated Duly Authorized Representative.

2. When a new LRP or Duly Authorized Representative is designated, the Discharger shall ensure that the appropriate revisions are made via SMARTS. In unexpected or emergency situations, it may be necessary for the Discharger to directly contact the State Water Board's Storm Water Section to register for SMARTS account access in order to designate a new LRP.

3. Documents certified and submitted via SMARTS by an unauthorized or ineligible LRP or Duly Authorized Representative are invalid.

4. LRP eligibility is as follows:

    a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

        i. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function; or

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

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

c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. This includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).

5. Duly Authorized Representative eligibility is as follows:

a. The Discharger must authorize via SMARTS any person designated as a Duly Authorized Representative;

b. The authorization shall specify that a person designated as a Duly Authorized Representative has responsibility for the overall operation of the regulated facility or activity, such as a person that is a manager, operator, superintendent, or another position of equivalent responsibility, or is an individual who has overall responsibility for environmental matters for the company; and,

c. The authorization must be current (it has been updated to reflect a different individual or position) prior to any report submittals, certifications, or records certified by the Duly Authorized Representative.

L. Certification

Any person signing, certifying, and submitting documents under Section XXI.K above shall 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 that manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, 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.

M. Anticipated Noncompliance

Dischargers shall give advance notice to the Regional Water Board and local MS4 of any planned changes in the industrial activity that may result in noncompliance with this General Permit.

N. Penalties for Falsification of Reports

Clean Water Act section 309(c)(4) provides that any person that knowingly makes any false material statement, representation, or certification in any

record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years or by both.

O. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the initiation of any legal action or relieve the Discharger from any responsibilities, liabilities, or penalties to which the Discharger is or may be subject to under section 311 of the Clean Water Act.

P. Severability

The provisions of this General Permit are severable; if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

Q. Penalties for Violations of Permit Conditions

1. Clean Water Act section 309 provides significant penalties for any person that violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act or any permit condition or limitation implementing any such section in a permit issued under section 402. Any person that violates any permit condition of this General Permit is subject to a civil penalty not to exceed $37,500[~~22~~24] per calendar day of such violation, as well as any other appropriate sanction provided by section 309 of the Clean Water Act.

2. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties, which may be greater than penalties under the Clean Water Act.

R. Transfers

Coverage under this General Permit is non-transferrable. When operation of the facility has been transferred to another entity, or a facility is relocated, new PRDs for NOI and NEC coverage must be certified and submitted via SMARTS prior to the transfer, or at least seven (7) days prior to the first day of operations for a relocated facility.

[~~22~~24] May be further adjusted in accordance with the Federal Civil Penalties Inflation Adjustment Act.

S. Continuation of Expired General Permit

If this General Permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 40 Code of Federal Regulations 122.6 and remain in full force and effect.

STATE WATER RESOURCES CONTROL BOARD

ORDER WQ 2015-0122-DWQ

AMENDING

NPDES NO. CAS000001

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

ORDER WQ 2014-0057-DWQ

GENERAL PERMIT FOR STORM WATER DISCHARES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

The California State Water Resources Control Board (hereafter State Water Board) finds:

1. The general permit for storm water discharges associated with industrial activities[1] (General Permit) was issued by the State Water Board as a National Pollutant Discharge Elimination System (NPDES) permit under the authority delegated by the U.S. Environmental Protection Agency. The General Permit was adopted on April 1, 2014, and became effective on July 1, 2015.

2. The General Permit requires Dischargers to submit permit registration documents to obtain Notice of Intent (NOI) coverage under the General Permit using the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) website by July 1, 2015. Leading up to the July 1, 2015 deadline, SMARTS experienced technical difficulties that rendered SMARTS inaccessible to Dischargers attempting to file permit registration documents as well as State Water Board staff who were assisting Dischargers with enrollment. State Water Board staff diligently worked to resolve the technical issues before the July 1, 2015 deadline, but technical problems persisted, particularly as there was a surge in online traffic on SMARTS in the days before the July 1, 2015 effective date.

3. Because of ongoing technical difficulties, a large number of Dischargers were unable to submit the required permit registration documents through SMARTS by July 1, 2015 despite repeated attempts to use SMARTS. The deadline for Existing Dischargers to electronically submit permit registration documents for NOI coverage is extended to August 14, 2015 in accordance with Attachment A to this Order so that State Water Board staff has additional time to resolve technical issues with SMARTS. The filing date for Dischargers who file for NOI coverage on or before August 14, 2015 will be deemed to be July 1, 2015. The deadline for New Dischargers registering for NOI coverage to electronically submit permit registration documents is extended to August 14, 2015 or at least seven (7) days prior to commencement of industrial activities, whichever is later, in accordance with Attachment A to this Order. The filing date for New Dischargers who file for NOI coverage on or before August 14, 2015 will be deemed to be July 1, 2015 or seven (7) days prior to commencement of industrial activities, whichever is later.

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[1] State Water Board Order 2014-0057-DWQ

4. While technical issues are being resolved, the General Permit is in effect. The deadline extension does not affect any of the other requirements or deadlines in the General Permit. Dischargers must maintain permit registration documents on site until they are able to submit the documents using SMARTS, and they must submit permit registration documents electronically by August 14, 2015. Any other information required by the General Permit to be submitted electronically, such as monitoring data, must also be kept on site until Dischargers are able to submit the information using SMARTS, and that information must be submitted electronically by August 14, 2015. Until August 14, 2015, the permit registration documents maintained onsite by the Discharger shall determine compliance with Section II (Receiving General Permit Coverage) of the General Permit.

5. State Water Board Order 97-03-DWQ was rescinded (except for Order 97-03- DWQ requirements that annual reports be submitted by July 1, 2015 and except for enforcement purposes) as of July 1, 2015. Because of technical difficulties in SMARTS the deadline to submit Annual Reports under Order 97-03-DWQ is extended to August 14, 2015.

6. Per Code of Federal Regulations, part 40, sections 122.62 and 124.10, the State Water Board issued a Public Notice on July 3, 2015 for a 30-day public review and comment period on the proposed amendment to Order WQ 2014-0057-DWQ, as specified in Attachment A to this Order. Formal comments were due by August 3, 2015.

IT IS HEREBY ORDERED THAT:

Order WQ 2014-0057-DWQ is hereby amended as shown in Attachment A of this Order. The amended Order shall become effective on August 4, 2015.

August 5, 2015
Date

Jeanine Townsend
Clerk to the Board

ATTACHMENT A
TO
ORDER WQ 2015-0122-DWQ
AMENDING
NPDES NO. CAS000001
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
ORDER WQ 2014-0057-DWQ
GENERAL PERMIT FOR STORM WATER DISCHARES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

Permit Order

I.A.6, (p.2)

6. State Water Board Order 97-03-DWQ is rescinded as of the effective date of this General Permit (July 1, 2015) except for Order 97-03-DWQ's requirement that annual reports be submitted by August ~~July~~ 14, 2015 and except for enforcement purposes.

Section II.B.1.b, (p.14)

b. The Discharger shall register for coverage under this General Permit by certifying and submitting PRDs via SMARTS (http://smarts.waterboards.ca.gov), which consist of:*

Section II.B.4.a-b (p.16)

4. Schedule for Submitting PRDs - Existing Dischargers Under the Previous Permit.

a. Existing Dischargers with coverage under the previous permit shall register for NOI coverage by or on August ~~July~~ 14, 2015 or for NEC coverage by or on October 1, 2015. The filing date for Existing Dischargers that register for NOI coverage by or on August 14, 2015 shall be deemed July 1, 2015. Existing Dischargers previously listed in Category 10 (Light Industry) of the previous permit, and continue to have no exposure to industrial activities and materials, have until October 1, 2015 to register for NEC coverage.

b. Existing Dischargers with coverage under the previous permit, that do not register for NOI coverage by or on August ~~July~~ 14, 2015, may have their permit coverage administratively terminated as soon as August ~~July~~ 14, 2015.

* [Note: This paragraph was deleted inadvertently in the version of this Order that was adopted by the Board. It has been restored.]

Section II.B.5.a (p.17)

5. Schedule for Submitting PRDs - New Dischargers Obtaining Coverage On or After July 1, 2015

   a. New Dischargers registering for NOI coverage on or after July 1, 2015 shall certify and submit PRDs via SMARTS at least seven (7) days prior to commencement of industrial activities or on August ~~July~~ 14, 2015, whichever comes later. The filing date for New Dischargers that register for NOI coverage by or on August 14, 2015 shall be deemed July 1, 2015 or seven (7) days prior to commencement of industrial activities, whichever comes later.

Fact Sheet

Section II.A.3 (p.12)

This General Permit requires all Dischargers to electronically certify and submit PRDs via SMARTS to obtain: (1) regulatory coverage, or (2) to certify that there are no industrial activities exposed to storm water at the facility and obtain regulatory coverage under the NEC provision of this General Permit. Facilities that were eligible to self-certify no exposure under the previous permit (see category 10 in Attachment 1 of the previous permit) are required to certify and submit via SMARTS PRDs for NOI coverage under this General Permit by or on August ~~July~~ 14, 2015 or for NEC coverage by or on October 1, 2015. The Water Board is estimating that 10,000 – 30,000 Dischargers may be registering for NOI or NEC coverage under this General Permit. Separate registration deadlines, one for NOI coverage and one for NEC coverage, provides Dischargers better assistance from Storm Water Helpdesk and staff.

Section II.A.3 (p.12)

All Existing Dischargers ~~who certify and submit PRDs via SMARTS for NOI coverage on or after July 1, 2015 or for NEC coverage on or after October 1, 2015,~~ who previously obtained regulatory coverage under Order 97-03-DWQ~~the current permit~~, shall ~~immediately~~ comply with the provisions in this General Permit by July 1, 2015. All Existing Dischargers who previously obtained regulatory coverage under Order 97-03-DWQ ~~the current permit~~ are required to certify and submit PRDs via SMARTS for NOI coverage on or after August 14, 2015 or for NEC coverage on or after October 1, 2015. All Dischargers who did not previously obtain regulatory coverage under Order 97-03-DWQ who certify and submit PRDs via SMARTS for NOI coverage on or after July 1, 2015 shall immediately comply with the provisions in this General Permit.

Attachment C Glossary (p.2)

Effective Date

The date, set by the State Water Resources Control Board (State Water Board), when at least one or more of the General Permit requirements take effect and the previous permit expires. This General Permit requires most of the requirements (such as ~~SMARTs submittals~~ minimum BMPs, sampling and analysis requirements) to take effect on July 1~~5~~, 2015.

Attachment D PRDs

Section D. (p.1)

D. When and How to Apply

> Dischargers proposing to conduct industrial activities subject to this General Permit must electronically certify and submit PRDs via the Storm Water Multiple Application Reporting and Tracking System (SMARTS)[1] no less than seven (7) days prior to the commencement of industrial activity. Existing Dischargers must submit PRDs for NOI coverage by or on August ~~July~~14, 2015 or for NEC coverage by or on October 1, 2015.

[1] The State Water Board has developed the SMARTS online database system to handle registration and reporting under this General Permit. More information regarding SMARTS and access to the database is available online at <https://smarts.waterboards.ca.gov>. [as of June 26, 2013].