

2018

DOE Annual Report 2018

Sandia National Laboratories/NM SNL

Follow this and additional works at: https://digitalrepository.unm.edu/snl_ms4

Recommended Citation

SNL, Sandia National Laboratories/NM. "DOE Annual Report 2018." (2018). https://digitalrepository.unm.edu/snl_ms4/26

This Report is brought to you for free and open access by the Sandia National Labs/NM Technical Reports at UNM Digital Repository. It has been accepted for inclusion in Municipal Separate Storm Sewer System (MS4) Permit by an authorized administrator of UNM Digital Repository. For more information, please contact disc@unm.edu.

Annual Report Format



**National Pollutant Discharge Elimination System Stormwater Program
MS4 Annual Report Format**



- Check box if you are submitting an individual Annual Report with one or more cooperative program elements.
- Check box if you are submitting an individual Annual Report with individual program elements only.
- Check box if this is a new name, address, etc.

1. MS4(s) Information

Department of Energy/Sandia National Laboratories (DOE/SNL)

Name of MS4

Steven Black Water Quality Program Lead

Name of Contact Person (First)

(Last)

(Title)

(505) 845-6885

steven.black@nnsa.doe.gov

Telephone (including area code)

E-mail

U. S. Department of Energy, National Nuclear Security Administration, Sandia Field Office, P.O. Box 5400

Mailing Address

Albuquerque

NM

87185-5400

City

State

ZIP code

What size population does your MS4(s) serve? 9,955

NPDES number

What is the reporting period for this report? (mm/dd/yyyy) From Jul 1, 2017 to Jun 30, 2018

2. Water Quality Priorities

A. Does your MS4(s) discharge to waters listed as impaired on a state 303(d) list? Yes No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4(s). Use a new line for each impairment, and attach additional pages as necessary.

| Impaired Water | Impairment | Approved TMDL | | TMDL assigns WLA to MS4 | |
|---------------------------|----------------------------|---|--|---|--|
| Rio Grande (NM-2105_50) | E. coli (see Addendum 2.B) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Rio Grande (NM-2105_50) | PCB (fish tissue) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Rio Grande (NM-2105_50) | DO | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Rio Grande (NM-2105.1_00) | PCB (fish tissue) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

2. B. Continued

| Impaired Water | Impairment | Approved TMDL | | TMDL assigns WLA to MS4 | |
|---------------------------|-------------------------------|---|--|---|--|
| Rio Grande (NM-2105.1_00) | PCB (water column) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Rio Grande (NM-2105.1_00) | Gross Alpha | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Rio Grande (NM-2105.1_00) | E. Coli (No impairment; 2016) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| | | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

C. What specific sources contributing to the impairment(s) are you targeting in your stormwater program?

There are no known/suspected sources contributing to impairments, and no anthropogenic E. coli source. Potential impacts from DO, gross alpha, and PCBs are being minimized through the Sediment Pollutant Load Reduction Plan.

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? Yes No

E. Are you implementing additional specific provisions to ensure their continued integrity? Yes No

3. Public Education and Public Participation

A. Is your public education program targeting specific pollutants and sources of those pollutants? Yes No

B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

Sediment, fertilizer, pesticides, herbicides, pet waste (E. coli), road salt, oil/petroleum, chemicals, and liquid/solid waste.

C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

See Addendum Section 3.C.

D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? Yes No

4. Construction

A. Do you have an ordinance or other regulatory mechanism stipulating:

Erosion and sediment control requirements? Yes No

Other construction waste control requirements? Yes No

Requirement to submit construction plans for review? Yes No

MS4 enforcement authority? Yes No

B. Do you have written procedures for:

Reviewing construction plans? Yes No

Performing inspections? Yes No

Responding to violations? Yes No

C. Identify the number of active construction sites \geq 1 acre in operation in your jurisdiction at any time during the reporting period.

D. How many of the sites identified in 4.C did you inspect during this reporting period?

E. Describe, on average, the frequency with which your program conducts construction site inspections.

Every construction site is inspected at least once per month; more frequent inspections (every 7 or 14 days) occur if the site is unstabilized or following a storm event of \geq 0.25 inches. See SWMPP Section 5.6 for additional details.

F. Do you prioritize certain construction sites for more frequent inspections? Yes No

If Yes, based on what criteria?

construction phase, receiving water, storm events, season, compliance history

G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

Yes Notice of violation No Authority

Yes Administrative fines No Authority

Yes Stop Work Orders No Authority

Yes Civil penalties No Authority

Yes Criminal actions No Authority

Yes Administrative orders No Authority

Yes Other

H. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? Yes No

I. What are the 3 most common types of violations documented during this reporting period?

Inadequate sediment controls, inadequate concrete wash-out facilities, and inadequate signage.

J. How often do municipal employees receive training on the construction program?

5. Illicit Discharge Elimination

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? Yes No

B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? Yes No

C. Identify the number of outfalls in your storm sewer system.

D. Do you have documented procedures, including frequency, for screening outfalls? Yes No

E. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?

F. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage?

G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.

Outfalls screening is conducted at least twice per week per outfall. Auto-samplers are operational year-round to collect potential non-stormwater samples, which would allow for water quality assessments to help identify the source.

H. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? Yes No

I. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? Yes No

J. During this reporting period, how many illicit discharges/illegal connections have you discovered?

K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?

L. How often do municipal employees receive training on the illicit discharge program?

6. Stormwater Management for Municipal Operations

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:

All public parks, ball fields, other recreational facilities and other open spaces Yes No

All municipal construction activities, including those disturbing less than 1 acre Yes No

All municipal turf grass/landscape management activities Yes No

All municipal vehicle fueling, operation and maintenance activities Yes No

All municipal maintenance yards Yes No

All municipal waste handling and disposal areas Yes No

Other

B. Are stormwater inspections conducted at these facilities? Yes No

C. If Yes, at what frequency are inspections conducted?

D. List activities for which operating procedures or management practices specific to stormwater management have been developed (e.g., road repairs, catch basin cleaning).

E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No

F. If Yes, which activities and/or facilities receive most frequent inspections?

G. Do all municipal employees and contractors overseeing planning and implementation of stormwater-related activities receive comprehensive training on stormwater management? Yes No

H. If yes, do you also provide regular updates and refreshers? Yes No

I. If so, how frequently and/or under what circumstances?

7. Long-term (Post-Construction) Stormwater Measures

A. Do you have an ordinance or other regulatory mechanism to require:

Site plan reviews for stormwater/water quality of all new and re-development projects? Yes No

Long-term operation and maintenance of stormwater management controls? Yes No

Retrofitting to incorporate long-term stormwater management controls? Yes No

B. If you have retrofit requirements, what are the circumstances/criteria?

C. What are your criteria for determining which new/re-development stormwater plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.)?

D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No

E. Do these performance or design standards require that pre-development hydrology be met for:

Flow volumes Yes No

Peak discharge rates Yes No

Discharge frequency Yes No

Flow duration Yes No

F. Please provide the URL/reference where all post-construction stormwater management standards can be found.

epa.gov/polluted-runoff-nonpoint-source-pollution/stormwater-management-federal-facilities-under-section-438

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection?

H. How many of the plans identified in 7.G were approved?

I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period?

J. How many of the practices/facilities identified in I were found to have inadequate maintenance?

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?

L. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities? Yes No

M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain stormwater management practices?

N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? Yes No

O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? Yes No

P. How often do municipal employees receive training on the post-construction program?

8. Program Resources

A. What was the annual expenditure to implement MS4 permit requirements this reporting period?

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit?

C. This year what is/are your source(s) of funding for the stormwater program, and annual revenue (amount or percentage) derived from each?

Source: Amount \$ OR %

Source: Amount \$ OR %

Source: Amount \$ OR %

D. How many FTEs does your municipality devote to the stormwater program (specifically for implementing the stormwater program; not municipal employees with other primary responsibilities)?

E. Do you share program implementation responsibilities with any other entities? Yes No

| Entity | Activity/Task/Responsibility | Your Oversight/Accountability Mechanism |
|--------|------------------------------|---|
| | | |
| | | |
| | | |

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your stormwater management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

| Indicator | Began Tracking (year) | Frequency | Number of Locations |
|---------------------------|-----------------------|-----------------------------|---------------------|
| <i>Example: E. coli</i> | 2003 | Weekly April–September | 20 |
| Non-stormwater discharges | 2016 | =/>Twice weekly, year-round | 5 |
| | | | |
| | | | |
| | | | |
| | | | |

B. What environmental quality trends have you documented over the duration of your stormwater program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

SWMPP control measures and water quality monitoring have not been implemented long enough to observe any trends. Water quality data collected to date are provided in Table 9.B of the Addendum to the Annual Report.

10. Additional Information


Please attach any additional information on the performance of your MS4 program, including information required in Parts I.C, I.D, and III.B. If providing clarification to any of the questions above, please provide the question number (e.g., 2C) in your response.

Certification Statement and Signature

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.

Yes No

Federal regulations require this application to be signed as follows: **For a municipal, State, Federal, or other public facility:** by either a principal executive or ranking elected official.

Signature  James W. Todd, Asst. MGR for Engineering Date (mm/dd/yyyy) 09/05/2018

Addendum 2018 MS4 Annual Report

Note: DOE and NTESS have included this addendum to provide additional information and clarify responses to some of the questions on the Annual Report as per Question 10.

Section 1- MS4 Information

NPDES number: This box will not allow for alphabetic text to be entered; only numerical. DOE's NOI tracking number is NMR04A011. NTESS's tracking number is NMR04A012.

Section 2- Water Quality Priorities

2.A: The SNL MS4 does not discharge directly to an impaired water; it discharges to a tributary (Tijeras Arroyo), and to adjacent MS4s that discharge to the Rio Grande (which is impaired). Approximately 90% of the SNL MS4 discharges to the Tijeras Arroyo, which discharges into the Isleta Pueblo to Tijeras Arroyo reach of the Rio Grande (Assessment Unit NM-2105_50). The other 10% of the SNL MS4 discharges to the Kirtland Air Force Base MS4, which discharges into the Alameda Bridge to HWY 550 reach of the Rio Grande (Assessment Unit NM-2105.1_00).

2.B: Both the Isleta Pueblo to Tijeras Arroyo reach of the Rio Grande (Assessment Unit NM-2105_50) and the Alameda Bridge to HWY 550 reach of the Rio Grande (Assessment Unit NM-2105.1_00) have approved TMDLs for *E. coli*. *E. coli* is the only approved TMDL in both reaches. *E. coli* is listed as an impairment for the Isleta Pueblo to Tijeras Arroyo reach, but was removed as an impairment from the Alameda Bridge to HWY 550 reach in 2016 (although the TMDL remains).

The TMDLs do not assign a waste load allocation (WLA) to SNL specifically, but they do assign WLAs for all the MS4s in the Albuquerque Urbanized Area. Section 2.4 of the SWMPP describes the portion of the WLA attributable to the SNL MS4 calculated according to the Percent Jurisdiction Approach, in accordance with the guidance and requirements provided in Appendix B of the MS4 Permit.

For the July 1, 2017 to June 30, 2018 reporting period, there were seven *E. coli* samples collected for stormwater discharges subject to a TMDL; two from discharges to the Isleta to Tijeras Arroyo reach, and five from discharges to the Alameda Bridge to HWY 550 reach. All of these samples contained concentrations of *E. coli* above the water quality standard, and therefore, the waste loads determined exceeded waste load allocations. There are no anthropogenic sources of *E. coli* (i.e., uncontained septic or sewage treatment; pet waste) within the boundaries of the SNL MS4. Table 2.B lists the *E. coli* waste loads calculated for the SNL MS4 since permit coverage was obtained.

2.D: In New Mexico, all waters are evaluated on a constituent by constituent basis. Any constituents not listed in the 303d list as an impairment are considered Tier 2 constituents. A

given water can have both Tier 1 and Tier 2 constituents at the same time. Both reaches of the Rio Grande that receive stormwater discharges from SNL have Tier 2 constituents.

2.E: There are no additional requirements in the MS4 Permit for discharges to a water with Tier 2 constituents (relative to Tier 1). All of the provisions implemented under the SWMPP are designed to protect receiving waters, regardless of Tier. Stormwater discharges from SNL/NM do not significantly contribute to impairment of Tier 2 constituents in receiving waters.

Section 3- Public Education and Public Participation

3.C: Requirements of the MS4 have been incorporated into corporate procedures and training materials, increasing the number of employees educated on MS4 stormwater quality issues and procedures. Key benefits include:

- increased awareness of minimizing pesticide, fertilizer, road salt among MS4 personnel and contractors responsible for their use and storage,
- increased awareness and implementation of proper stormwater controls at small construction sites < 1 acre, with emphasis on controlling the discharge of uncontaminated natural sediments,
- Increased awareness that stormwater discharges from SNL may flow to natural waterways, including the Rio Grande.

Approximately 242 Members of the Workforce and DOE/NNSA/SFO personnel completed Stormwater Pollution Prevention Training (SW100) during the reporting period.

3.D: The SNL MS4 does not have a formal advisory committee; however, DOE and NTESS are in regular attendance at periodic meetings of the Technical Advisory Group which includes permittees from the Albuquerque MS4 Permit. DOE and NTESS also participate in the DOE/DoD Semi-Annual Public Meetings where public stakeholders can openly provide comment, ask questions and/or express concerns.

Section 4- Construction

4.C: Five construction projects within the SNL MS4 had active permit coverage under the CGP during the reporting period. A SWPPP for each of these projects was developed by the Stormwater Program. Information pertinent to the MS4 Permit for these four construction projects is included in Appendix G-1 of the SWMPP. These sites are:

- Building 905 (new construction)
- Building 952 (landscaping and drainage improvements)
- Building 725 (addition to existing building)
- Battery Test facility (new construction)
- 956 Track (landscaping and drainage improvements)

4.G: The following language from Section 1.6 of the SWMPP is provided for clarity as to the possible types of enforcement actions available to DOE and NTESS:

- DOE can enforce compliance with the requirements of the MS4 Permit on NTESS through contract DE-NA-0003525, by application of the following clauses: Clause I-19, DEAR 970.5204-2 Laws, Regulations, and DOE Directives (DEC 2000)(Class Deviation); Clause I-21 DEAR 970.5215-3 Conditional Payment of Fee, Profits, and Other Incentives-Facility Management Contracts (AUG 2009) Alternate II (August 2009) (NNSA Class Deviation Oct 2011) (NNSA Class Deviation May 2016); and Section I.B, incorporating by reference DEAR clause 970.5223-1, Integration of Environment, Safety, and Health Into Work Planning and Execution (DEC 2000). These clauses require NTESS to comply with all applicable Federal, State, and local laws and regulations, including DOE regulations; impose requirements on subcontractors at any tier to the extent necessary to ensure NTESS's compliance with the requirements of the MS4 Permit; and cooperate with Federal and non-Federal agencies having jurisdiction over environment, safety, and health matters under the contract.
- The Corporate Policy System affords NTESS the ability to “enforce” compliance with stormwater requirements, which may include disciplinary action up to and including termination of employment. DOE/NNSA/SFO may issue a written stop work order for an activity that is imminently dangerous to the life or health of the workforce, public, or the environment. NTESS can identify an imminent danger activity to instruct a worker stoppage and contact DOE/NNSA/SFO immediately for a written stop work order.

When corrective conditions are observed during site inspections, a corrective action request is submitted to the construction manager. After the corrective action has been implemented by the construction subcontractor and documented by Stormwater Program personnel, the inspection and corrective action forms are certified by all permit operators (those holding CGP NOIs). To date, a Notice of Violation has not been issued from a regulatory agency for non-compliance with the CGP, MSGP, nor MS4.

4.I: To date, a Notice of Violation has not been issued from a regulatory agency for non-compliance with the CGP, MSGP, nor MS4. Several corrective conditions were identified by SNL (CGP Permit Lead) during inspections and prompt actions were taken to address the issues.

4.J: Stormwater Pollution Prevention Training (SW100) reviews the concepts of stormwater pollution prevention; summarizes the CGP and MS4 regulatory requirements at SNL/NM; and provides guidance on spill prevention/response and best management practices. Members of the Workforce and DOE/NNSA/SFO personnel whose job duties include any of the following responsibilities are required to take SW100 annually:

- Design, install, maintain, or repair stormwater controls, conduct inspections, or implement corrective actions at construction sites.
- Plan, review, permit or approve construction site plans, inspections and corrective actions.
- Hold a role as a construction site operator, contractor or provide support.

- Operate or maintain SNL/NM grounds or landscaping, fleet, buildings (outside), roads, stormwater inlets or drainage system, or work on projects with any ground disturbance.
- Design projects that control the effects to water quality from stormwater runoff.
- Plan or review projects with regard to stormwater quality standards and pollution prevention controls.

Stormwater Discharges from Industrial Sites Training (SW200) exists for activities/sites related to stormwater runoff from industrial sites/activities regulated by the MSGP. SW200 is required for Members of the Workforce and DOE/NNSA/SFO personnel who work in one or more of the industrial MSGP-permitted areas, or whose job duties include the responsibility for implementing stormwater pollution prevention controls/activities in those areas.

Section 5- Illicit Discharge Elimination

5.C: There are four outfalls from the MS4, which are coincident with the following monitoring locations:

- SWSP-05
- SWSP-24
- SWSP-35
- SWSP-36

A description of MS4 outfalls is provided in SWMPP Section 12.2. Maps of MS4 outfall locations and their drainage areas are provided in Appendix B of the SWMPP.

5.G: Outfalls screening is conducted at least twice per week per outfall. Auto-samplers are operational year-round to collect potential non-stormwater samples, which would allow for water quality assessments to help identify the source. Informal scans are conducted as frequently as daily by field personnel and other environmental staff trained to monitor for leaks, spills, and other discharges. Formal screening will be conducted and documented at least once every five years which will include the inspection of all known outfalls and MS4 conveyance structures for the presence of non-stormwater discharges. Illicit discharges that are discovered are sampled (as appropriate), tracked to a source, and corrected through administrative or engineered control measures. A spreadsheet is being maintained for the duration of the Permit term to document non-stormwater and illicit discharges.

5.J: Two illicit discharges were detected during the reporting period. The source and volume of each release is listed in Table 5.J below.

Table 5.J: List of illicit discharges that occurred during the reporting period

| Date of Illicit Discharge | Source and Reason of Discharge | Estimated Volume of Discharge |
|----------------------------------|---|--------------------------------------|
| 7/4/2017 | Building 983 evaporative cooler unit overflow | 200 gallons |

| | | |
|-----------|---|-------------|
| 2/23/2018 | Building 890 evaporative cooler unit overflow | 100 gallons |
|-----------|---|-------------|

5.L: See Addendum 4.J.

Section 6- Stormwater Management for Municipal Operations

6.A: SNL operations do not include SWPPPs for all of the activities listed, but we do maintain policies and/or procedures intended to prevent municipal activities from impacting stormwater quality for each of the activities listed (see table 6A).

Table 6.A: List of municipal activities and plans used to ensure prevention of stormwater pollution.

| Activity Category | Policy, Procedure, or Plan |
|---|--|
| Public parks, open spaces, other outdoor recreation areas | Gardener’s Maintenance Manual Integrated Pest Management Plan |
| Construction activities | CGP SWPPs NEPA ESH100.2.ENV.10, <i>Manage Surface and Stormwater Discharges</i> |
| Turf grass/ landscape activities | Gardener’s Maintenance Manual, Integrated Pest Management Plan |
| Vehicle fueling, operation, and maintenance | MSGP SWPP Corporate Procedures: <ul style="list-style-type: none"> ESH100.2.ENV.10, <i>Manage Surface and Stormwater Discharges</i> ESH100.2.ENV.4, <i>Manage Oil and Fuel Storage</i> |
| Maintenance yards | Corporate Procedures: <ul style="list-style-type: none"> ESH100.2.ENV.10, <i>Manage Surface and Stormwater Discharges</i> ESH100.2.ENV.4, <i>Manage Oil and Fuel Storage</i> |
| Waste handling and disposal facilities | MSGP SWPP Corporate Procedures: <ul style="list-style-type: none"> FOP 12-14: Recycling Operations ESH100.2.ENV.10, <i>Manage Surface and Stormwater Discharges</i> |

| | |
|--|--|
| | <ul style="list-style-type: none"> • ESH100.2.ENV.25, <i>Manage Other Regulated Waste at SNL/NM</i> • ESH100.2.ENV.26, <i>Manage Non-Hazardous Solid Waste at SNL/NM</i> |
|--|--|

6.C: Construction stormwater inspections are performed as per the 2017 CGP. Specific details and metrics are provided in Section 5.6 of the SWMPP.

- During the wet season (July 1 through October 31):
 - Active or unstabilized construction areas at SNL/NM that eventually discharge to the Rio Grande via adjacent MS4s are inspected every 7 days and within 24 hours of a storm event of 0.25 inches or greater.
 - Active or unstabilized construction areas at SNL/NM that discharge to Tijeras Arroyo are inspected every 14 days and within 24 hours of a storm event of 0.25 inches or greater.
- During the dry season (November 1 through June 30):
 - Active or unstabilized construction areas at SNL/NM are inspected once per month and within 24 hours of a storm event of 0.25 inches or greater.
- Construction areas where stabilization has been completed (and permit termination has not yet been filed) are inspected monthly.

Industrial stormwater inspections are performed per the 2015 MSGP at each permitted site once every quarter of the calendar year. One quarterly inspection is conducted during a time when a stormwater discharge is occurring (or has the potential to occur). Inspections are conducted more frequently than quarterly if there are significant findings identified during routine inspections and where sector-specific requirements require more frequent inspections.

The inspections required by the MS4 Permit in addition to those required by the CGP and MSGP that also satisfy the requirements of the MS4 Permit, are discussed in Addendum 7.I.

6.D: The following is a list of operating procedures and management specific to stormwater that have been developed. For additional details see SWMPP Section 7.

- Sediment control plan
- Collection of used motor vehicle fluids and toxics (including paint, solvents, fertilizers, pesticides, herbicides)
- Cleaning and disposal of trash and/or sediment from stormwater basins
- Street cleaning
- Fertilizer use
- Pesticide use
- Solid waste collection and management
- De-icing material storage

6.G: See Addendum 4.J.

6.H: Stormwater Pollution Prevention Training (SW100) and Stormwater Discharges from Industrial Sites Training (SW200) are reviewed annually and updated as necessary.

Section 7- Long Term (Post-Construction) Stormwater Measures

7.B: SNL is a Federal facility and currently complies with the Energy Independence and Security Act (EISA), Section 438 of the Clean Water Act (CWA). The purpose of Section 438 is to preserve or restore predevelopment hydrology for all development and redevelopment projects with a footprint that exceeds 5,000 gross square feet (GSF). Compliance with EISA Section 438 requires SNL to manage post-construction runoff by detaining stormwater on-site via: 1) detention of the runoff from a 95th percentile storm or 2) calculating the pre-development and post-development runoff, and detaining the volume difference.

New buildings, major renovations and alterations of buildings greater than 5,000 GSF at SNL must comply with the Guiding Principles for Federal Leadership in High Performance Sustainable Building. Where the work exceeds a footprint of 5,000 sq.-ft. and \$5 million, buildings must achieve the U.S. Green Building Council's certification of Leadership in Energy and Environmental Design (LEED) Gold for New Construction. A design charrette occurs in the construction planning stages of each project and includes an evaluation of Green Infrastructure/Low Impact Development/Sustainable practices.

7.F: NTESS's Facilities and Emergency Management Center personnel developed and adhere to their *Design Standards Manual* for implementing stormwater runoff requirements of EISA Section 438 at new or redeveloped project with a footprint greater than 5,000 square feet by following guidance provided in the EPA's "Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act", dated December 4, 2009. EISA Section 438 and associated guidance and fact sheets are publicly-accessible at: <https://www.epa.gov/polluted-runoff-nonpoint-source-pollution/stormwater-management-federal-facilities-under-section-438>.

7.G: There were three development and redevelopment plans reviewed during the reporting period to assess impacts to water quality and receiving stream protection for the following sites:

- Building 905
- Building 725
- Battery Test facility

7.I: MS4 Part I.D.5b.(ii)(c) requires permittees to perform inspections of stormwater management structures during construction and post-construction to verify the structures are built and operating as designed. Since permit inception there have been no stormwater management structures completed that fall under the purview of the permit. As they are completed, the structures will be inspected annually and reported in the Annual Report.

7.K: In the event controls need to be replaced/repaired/maintained; and 1) the repair or replacement is not significant; and 2) it can be corrected through routine maintenance; the work is required to be initiated immediately¹ and completed by the close of the next business day. In the event controls need to be replaced/repaired/maintained; and 1) the repair or replacement is significant; or 2) it cannot be corrected through routine maintenance; actions are required to be immediately initiated to minimize or prevent the discharge of pollutants, and temporary controls maintained until a permanent solution is installed and made operational. Controls are to be installed, repaired or made operational within 7 calendar days from the date of discovery of the corrective condition. This includes cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events. In the event that a required stormwater control was never installed, was installed incorrectly, or was not installed in accordance with permit requirements, the control is required to be installed, repaired and/or made operational within 7 calendar days from the date of discovery of the corrective condition.

7.L: Enforcement authority is limited in scope as discussed in Addendum 4.G.

7.O: All Stormwater Program personnel have access to the electronic tool (e.g., GIS, database, spreadsheet) used to track post-construction, BMPs, inspections and maintenance.

7.P: See Addendum 4.J.

Section 8- Program Resources

8.A, B and C: Per Part III.B.4 of the MS4 Permit, this question is only applicable to Class A permittees. DOE and NTESS are Class C permittees.

8.D: The 5.0 estimated FTEs required to implement the Stormwater Program include field staff, professional staff, and management. Approximately 4.75 FTEs are provided by NTESS and 0.25 FTE are provided by DOE.

8.E: DOE and NTESS share responsibility for the SNL MS4. DOE and NTESS together will comply with all of the requirements of the MS4 Permit, but will do so independently of participation in a cooperative group. DOE and NTESS may share monitoring data with other MS4s when the sharing of such data is useful to DOE and NTESS, or to the other entity. The sharing of data shall not be construed as evidence of the existence of a cooperative program or a shared responsibility for meeting Permit requirements.

Section 9- Evaluating/Measuring Progress

9.A: This answer is limited to non-stormwater discharges for this reporting period. Additional tracking measures are expected when stormwater data is collected in future years.

¹ "Immediately" means corrective actions will be initiated on the same day as discovery to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if the problem is identified at a time in the work day when it is too late to initiate corrective action, corrective action is required to begin on the following work day.

Section 10- Additional Information

Information required in Parts I.C, I.D, and III.B is provided in the Updated SWMPP submitted in conjunction with this Annual Report.

Table 2.B-1
TMDL Waste Load Calculations
Isleta Pueblo to Tijeras Arroyo Reach (Assessment Unit NM-2105_50)

| Date | 11/22/2016 | 4/25/2017 | 8/1/2017 | 5/22/2018 |
|---|-----------------|-----------------|-----------------|-----------------|
| Rainfall at SNL/NM Tower A21 (inches) | 0.43 | 0.36 | 0.61 | 0.33 |
| Flow at USGS Guage (ave. daily cfs) ¹ | 881 | 4480 | 750 | 670 |
| TMDL Flow Condition (chart look-up) ² | Mid-Range | High | Mid-Range | Mid-Range |
| Waste Load Allocation for SWSP-05 ^{2, 5} | 3.17E+08 | 1.88E+09 | 3.17E+08 | 3.17E+08 |
| In-flow at SWSP-02 (gpd) ³ | 601,585 | 184,600 | 533,304 | 265,350 |
| Discahrge at SWSP-05 (gpd) ³ | 4,231,033 | 1,183,962 | 2,733,813 | 1,991,564 |
| E. coli Concentration at SWSP-02 (cfu/100 mL) ⁴ | 2098 | NA | 3076 | 548 |
| E. coli Concentration at SWSP-05 (cfu/100 mL) ⁴ | 3873 | 2613 | 20 | 727 |
| E. coli Waste Load at SWSP-02 (cfu/day) ⁵ | 4.78E+10 | NA | 6.21E+10 | 5.51E+09 |
| E. coli Waste Load at SWSP-05 (cfu/day) ⁵ | 6.21E+11 | 1.17E+11 | 2.07E+09 | 5.48E+10 |
| Correction for non-SNL sources (inflow to MS4)⁶ | | | | |
| Waste Load at SWSP-02 from non-SNL areas (cfu/day) | 2.99E+10 | NA | 3.88E+10 | 3.44E+09 |
| SNL E. coli Waste Load at SWSP-05 (cfu/day)⁷ | 5.91E+11 | 1.17E+11 | 2.07E+09 | 5.48E+10 |

¹ USGS Gauge 08330000 (Rio Grande at Albuquerque)

² See SWMPP Section 12 for chart, explanation and detail

³ Data from SNL flow gauges, see SWMPP Section 12 for details

⁴ From SNL wet weather monitoring results

⁵ Calculated according to methods in SWMPP Section 12.

⁶ Assumes that 35% of the SWSP-02 drainage area lies within the SNL MS4 jurisdiction

⁷ Total *E. coli* WL discharged to the Isleta Pueblo to Tijeras Arroyo reach

Table 2.B-2
TMDL Waste Load Calculations
Alameda to HWY 550 Reach (Assessment Unit NM-2105.1_00)

| Date | 11/22/2016 | 1/16/2017 | 4/25/2017 | 8/1/2017 | 8/30/2017 | 9/28/2017 | 2/15/2018 | 5/22/2018 |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Rain at SNL/NM Tower A21 (inches) | 0.43 | 0.27 | 0.36 | 0.61 | 0.32 | 0.83 | 0.64 | 0.33 |
| Flow at USGS Guage (ave. daily cfs) ¹ | 881 | 934 | 4480 | 750 | 439 | 1190 | 614 | 670 |
| TMDL Flow Condition (chart look-up) ² | Mid-Range | Moist | High | Mid-Range | Dry | Moist | Dry | Mid-Range |
| Waste Load Allocation for SWSP-24 ^{2, 6} | 4.15E+07 | 7.53E+07 | 2.60E+08 | 4.15E+07 | 2.70E+07 | 7.53E+07 | 2.70E+07 | 4.15E+07 |
| Waste Load Allocation for SWSP-35 ^{2, 6} | 1.04E+07 | 1.88E+07 | 6.50E+07 | 1.04E+07 | 6.74E+06 | 1.88E+07 | 6.74E+06 | 1.04E+07 |
| Waste Load Allocation for SWSP-36 ^{2, 6} | 5.19E+06 | 9.41E+06 | 3.25E+07 | 5.19E+06 | 3.37E+06 | 9.41E+06 | 3.37E+06 | 5.19E+06 |
| Discharge at SWSP-05 (gpd) ³ | 4.23E+06 | 3.31E+06 | 1.18E+06 | 2.73E+06 | 2.64E+06 | 5.60E+06 | 3.02E+06 | 1.99E+06 |
| Dischahrge at SWSP-24 (gpd) ⁴ | 3.22E+05 | 2.53E+05 | 9.02E+04 | 2.08E+05 | 2.01E+05 | 4.27E+05 | 2.30E+05 | 1.52E+05 |
| Discharge at SWSP-35 (gpd) ⁴ | 8.06E+04 | 6.31E+04 | 2.26E+04 | 5.21E+04 | 5.02E+04 | 1.07E+05 | 5.75E+04 | 3.79E+04 |
| Dischahrge at SWSP-36 (gpd) ⁴ | 40,296 | 31,567 | 11,276 | 26,036 | 25,111 | 53,365 | 28,757 | 18,967 |
| E. coli Concentration at SWSP-24 (cfu/100 mL) ⁵ | -- | -- | -- | 1,274 | 3,654 | 4,611 | 109 | 1,354 |
| E. coli Concentration at SWSP-35 (cfu/100 mL) ⁵ | -- | -- | -- | -- | -- | -- | -- | -- |
| E. coli Concentration at SWSP-36 (cfu/100 mL) ⁵ | 517.2 | 1553.1 | 331 | 365.4 | 602 | 145 | -- | -- |
| E. coli Waste Load at SWSP-24 (cfu/day) ⁶ | -- | -- | -- | 1.01E+10 | 2.78E+10 | 7.46E+10 | 9.50E+08 | 7.78E+09 |
| E. coli Waste Load at SWSP-35 (cfu/day) ⁶ | -- | -- | -- | -- | -- | -- | -- | -- |
| E. coli Waste Load at SWSP-36 (cfu/day) ⁶ | 7.89E+08 | | 1.41E+08 | 3.60E+08 | 5.73E+08 | 2.93E+08 | -- | -- |
| Total Waste Load⁷ | 7.89E+08 | 0.00E+00 | 1.41E+08 | 1.04E+10 | 2.84E+10 | 7.49E+10 | 9.50E+08 | 7.78E+09 |

¹ USGS Gauge 08330000 (Rio Grande at Albuquerque)

² See SWMPP Section 12 for chart, explanation and detail

³ Data from flow gauge at SWSP-05, see SWMPP Section 12 for details

⁴ Estimated from flow data at SWSP-05 based on drainage area for each outfall

⁵ From SNL wet weather monitoring results

⁶ Calculated according to methods in SWMPP Section 12.

⁷ Total *E. coli* WL from all outfalls that discharge to the Alameda to HWY 550 Bridge reach

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|----------------|-------------|------------|----------------------|-------------------|
| SWSP-02 | 8/1/2016 | pH (field) | 8.48 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 9.01 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.075 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.89 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 60.8 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 87.1 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.21 | 8.5 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.54 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | HT | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.337 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 64.5 | -- | mg/L | N | EPA 410.4 |
| | | Biological Oxygen Demand | HT | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 6.11 +/-1.32 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00527 | 0.00017 | ug/L | J | EPA 1668 C |
| | | Oil and grease | 1.28 | 15 | mg/L | J | SM 9223 B |
| SWSP-02 | 8/5/2016 | pH (field) | 8.61 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 9.03 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.057 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.58 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 33.5 | -- | mg/L | * | SM 2540 D |
| | | Total Dissolved Solids | 30 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1 | 8.4 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.448 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.1 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.304 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 19.8 | -- | mg/L | J | EPA 410.4 |
| | | Biological Oxygen Demand | HT | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 5.49 +/-1.66 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0065 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | ND<1.19 | 15 | mg/L | U | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|-----------------|-------------|------------|----------------------|-------------------|
| SWSP-02 | 8/22/2016 | pH (field) | 8.3 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 9.4 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.084 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.88 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 137 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 133 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.4 | 9.4 | mg/L | B | EPA 351.2 |
| | | Nitrate + Nitrite | 0.37 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.14 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.545 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 89.7 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 10 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 13.0 +/- 4.41 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.025223 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | ND<1.19 | 15 | mg/L | U | SM 9223 B |
| SWSP-02 | 9/12/2016 | pH (field) | 8.77 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 11.99 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.09 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.44 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | NS | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | NS | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | NS | 8.5 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | NS | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.143 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.328 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | NS | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 15 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | NS | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | NS | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | NS | 15 | mg/L | | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|--------------------|-------------|------------|----------------------|-------------------|
| SWSP-02 | 11/22/2016 | pH (field) | 8.08 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 8.96 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.086 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 2.99 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 2098 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 96.8 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 110 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.05 | 11.6 | mg/L | B | EPA 351.2 |
| | | Nitrate + Nitrite | 0.465 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0811 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.488 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 429 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 14 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 11.7+/-2.36 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0398 | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | ND<1.18 | 15 | mg/L | U | SM 9223 B | | |
| SWSP-02 | 8/1/2017 | pH (field) | 6.73 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 10.04 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.09 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.9 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 3076 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 292 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | INS | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.76 | 47.1 | mg/L | * | EPA 351.2 |
| | | Nitrate + Nitrite | 1.02 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0733 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.495 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 96.1 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 10 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 34.6+/-7.03 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0523 | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | INS | 15 | mg/L | | SM 9223 B | | |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|--------------------|-------------|------------|----------------------|-------------------|
| SWSP-02 | 8/30/2017 | pH (field) | 7.7 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 9.3 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.068 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.3 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 487 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 300 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 55.7 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.74 | 18.7 | mg/L | N | EPA 351.2 |
| | | Nitrate + Nitrite | 0.642 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.205 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.799 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 43.8 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 8 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 19.5+/-4.20 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0358 | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | ND<1.20 | 15 | mg/L | NU | SM 9223 B | | |
| SWSP-02 | 9/28/2017 | pH (field) | 8.25 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 6.17 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.096 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.82 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | >24196 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 140 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 91.4 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.32 | 9.8 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.566 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.196 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.387 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 60.7 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 9 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 5.50+/-1.21 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0159 | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | ND<1.31 | 15 | mg/L | U | SM 9223 B | | |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|-------------------|-------------|------------|----------------------|-------------------|
| SWSP-02 | 5/22/2018 | pH (field) | 6.63 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 11.02 | <32.2 | Deg. C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.127 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 13.13 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 548 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 337 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 150 | 1500 | mg/L | B | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 3.62 | 49.4 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 1.19 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.282 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.67 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 103 | -- | mg/L | B | EPA 410.4 |
| | | Biological Oxygen Demand | 34 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 19.1+/-2.4 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0084 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | INS | 15 | mg/L | | SM 9223 B |

--: No water quality standard applicable to this analyte

*: Recovery or %RPD not within acceptance limits and/or spike amount not compatible with the sample

**: Analyte is a surrogate compound

B: The analyte was found in the blank above the effective MDL.

J: Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL

N: Results associated with a spike analysis that was outside control limits

U: The analyte was analyzed for but not detected below the detection limit (see Table 12-3, SWMPP Chapter 12)

HT: sample not analyzed due to hold time violation

INS: insufficient sample volume collected to submit to lab

NS: parameter intentionally not sampled

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|-----------------|-------------|------------|----------------------|-------------------|
| SWSP-05 | 8/1/2016 | pH (field) | 7.18 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 7.67 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.221 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.29 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 25.4 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 237 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 4.38 | 33.7 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 2.85 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | HT | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.337 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 250 | -- | mg/L | N | EPA 410.4 |
| | | Biological Oxygen Demand | HT | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 0.85 +/-0.608 | 15 | pCi/L | U | EPA 900.0 |
| | | PCBs | 0.000428 | 0.00017 | ug/L | J | EPA 1668 C |
| | | Oil and grease | 1.33 | 15 | mg/L | J | SM 9223 B |
| SWSP-05 | 8/5/2016 | pH (field) | 8.58 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 15.87 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.117 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 7.17 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 94.6 | -- | mg/L | * | SM 2540 D |
| | | Total Dissolved Solids | 130 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.19 | 8.4 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.608 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.101 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.256 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 39 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | HT | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 7.49 +/-2.49 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00127 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | ND<1.20 | 15 | mg/L | U | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|---------------|-------------|------------|----------------------|-------------------|
| SWSP-05 | 9/12/2016 | pH (field) | 8.87 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 12.61 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.068 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.97 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | NS | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | NS | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | NS | 8.7 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | NS | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0955 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.26 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | NS | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 13 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | NS | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | NS | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | NS | 15 | mg/L | | SM 9223 B |
| SWSP-05 | 11/22/2016 | pH (field) | 8.37 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 7.5 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.057 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 3.68 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 3873 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 53.7 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 103 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 0.46 | 9.0 | mg/L | B | EPA 351.2 |
| | | Nitrate + Nitrite | 0.355 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.057 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.262 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 58 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 7 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 12.9+/-2.77 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0098 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | ND<1.21 | 15 | mg/L | U | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|-----------------|-------------|------------|----------------------|-------------------|
| SWSP-05 | 4/25/2017 | pH (field) | 7.09 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 7.64 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.112 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.82 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 2613 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 75 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 116 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 3.50 | 36.6 | mg/L | B | EPA 351.2 |
| | | Nitrate + Nitrite | 0.845 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.189 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.358 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 166 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 28 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 4.13+/-1.05 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00215 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | ND<1.40 | 15 | mg/L | U | SM 9223 B |
| SWSP-05 | 8/1/2017 | pH (field) | 6.88 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 5.7 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.084 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 10.42 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 20 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | INS | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | INS | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.55 | 43.0 | mg/L | * | EPA 351.2 |
| | | Nitrate + Nitrite | 0.575 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.153 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | INS | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | INS | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 19 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 6.25+/-1.62 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.000808 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | INS | 15 | mg/L | | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|--------------------|-------------|------------|----------------------|-------------------|
| SWSP-05 | 5/22/2018 | pH (field) | 6.23 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 10.08 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.076 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 13.99 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 727 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 287 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 151 | 1500 | mg/L | B | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 3.13 | 52.9 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 1.01 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.207 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.534 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 107 | -- | mg/L | B | EPA 410.4 |
| | | Biological Oxygen Demand | 37 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 15.4+/-2.22 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00479 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 1.54 | 15 | mg/L | *JN | SM 9223 B |

--: No water quality standard applicable to this analyte

*: Recovery or %RPD not within acceptance limits and/or spike amount not compatible with the sample

** : Analyte is a surrogate compound

B: The analyte was found in the blank above the effective MDL

J: Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL

N: Results associated with a spike analysis that was outside control limits

U: The analyte was analyzed for but not detected below the detection limit (see Table 12-3, SWMPP Chapter 12)

HT: sample not analyzed due to hold time violation

INS: insufficient sample volume collected to submit to lab

NS: parameter intentionally not sampled

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|----------------|-------------|------------|----------------------|-------------------|
| SWSP-24 | 8/1/2016 | pH (field) | 7.21 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 23.68 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.138 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 2.91 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 168 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 137 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 2.84 | 32.8 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 1.31 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | HT | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.148 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 176 | -- | mg/L | N | EPA 410.4 |
| | | Biological Oxygen Demand | HT | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 2.4 +/-0.670 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00369 | 0.00017 | ug/L | J | EPA 1668 C |
| | | Oil and grease | Ins. Vol. | 15 | mg/L | | SM 9223 B |
| SWSP-24 | 8/5/2016 | pH (field) | 8.57 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 6.81 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.044 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.5 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 38.2 | -- | mg/L | * | SM 2540 D |
| | | Total Dissolved Solids | 30 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | INS | 8.4 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.342 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | INS | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | INS | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | INS | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | INS | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 0.770+/-0.674 | 15 | pCi/L | U | EPA 900.0 |
| | | PCBs | 0.0109 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | ND<1.27 | 15 | mg/L | U | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|---------------|-------------|------------|----------------------|-------------------|
| SWSP-24 | 8/1/2017 | pH (field) | 6.97 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 8.25 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.074 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.96 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 1274 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | INS | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | INS | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.37 | 40.3 | mg/L | * | EPA 351.2 |
| | | Nitrate + Nitrite | INS | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0607 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.153 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 136 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 14 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | INS | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0129 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | INS | 15 | mg/L | | SM 9223 B |
| SWSP-24 | 8/30/2017 | pH (field) | 8.32 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 12.66 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.07 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.86 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 3654 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 182 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 32.9 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.26 | 9.3 | mg/L | N | EPA 351.2 |
| | | Nitrate + Nitrite | 0.607 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.117 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.322 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 50 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 6.7 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 10.1+/-2.0 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.01 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 1.57 | 15 | mg/L | JN | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|----------------|-------------|------------|----------------------|-------------------|
| SWSP-24 | 9/28/2017 | pH (field) | 8.36 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 6.58 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.053 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 10.31 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 4611 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 98 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 54.3 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 0.84 | 9.0 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.288 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.133 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.168 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 86.2 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 8 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 5.98+/-1.22 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0108 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 2.5 | 15 | mg/L | J | SM 9223 B |
| SWSP-24 | 2/15/2018 | pH (field) | 7.94 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 5.08 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.116 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 13.32 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 109 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 18 | -- | mg/L | J | SM 2540 D |
| | | Total Dissolved Solids | 116 | 1500 | mg/L | B | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.69 | 13.8 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.649 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.2 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.236 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 139 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 33 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 0.196+/-0.741 | 15 | pCi/L | U | EPA 900.0 |
| | | PCBs | 0.00286 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 1.56 | 15 | mg/L | J | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|---------------|-------------|------------|----------------------|-------------------|
| SWSP-24 | 5/22/2018 | pH (field) | 5.09 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 13.35 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.114 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 9.43 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 1354 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 208 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 133 | 1500 | mg/L | B | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 3.53 | -53.6 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.779 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.442 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.609 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 131 | -- | mg/L | B | EPA 410.4 |
| | | Biological Oxygen Demand | 43 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 12.1+/-1.65 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0141 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 2.54 | 15 | mg/L | *JN | SM 9223 B |

--: No water quality standard applicable to this analyte

*: Recovery or %RPD not within acceptance limits and/or spike amount not compatible with the sample

** : Analyte is a surrogate compound.

B: The analyte was found in the blank above the effective MDL

J: Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL

N: Results associated with a spike analysis that was outside control limits

U: The analyte was analyzed for but not detected below the detection limit (see Table 12-3, SWMPP Chapter 12)

HT: sample not analyzed due to hold time violation

INS: insufficient sample volume collected to submit to lab

NS: parameter intentionally not sampled

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|----------------|-------------|------------|----------------------|-------------------|
| SWSP-35 | 8/1/2016 | pH (field) | 7.35 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 12.82 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.119 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 6.29 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 12.4 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 151 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 2.81 | 28.4 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 1.71 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | HT | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.139 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxygen Demand | 159 | -- | mg/L | N | EPA 410.4 |
| | | Biological Oxygen Demand | HT | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 0.498 +/-0.402 | 15 | pCi/L | U | EPA 900.0 |
| | | PCBs | 0.00439 | 0.00017 | ug/L | J | EPA 1668 C |
| | | Oil and grease | ND<1.24 | 15 | mg/L | U | SM 9223 B |

--: No water quality standard applicable to this analyte

*: Recovery or %RPD not within acceptance limits and/or spike amount not compatible with the sample

** : Analyte is a surrogate compound

B: The analyte was found in the blank above the effective MDL

J: Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL

N: Results associated with a spike analysis that was outside control limits

U: The analyte was analyzed for but not detected below the detection limit (see Table 12-3, SWMPP Chapter 12)

HT: sample not analyzed due to hold time violation

INS: insufficient sample volume collected to submit to lab

NS: parameter intentionally not sampled

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|----------------|-------------|------------|----------------------|-------------------|
| SWSP-36 | 8/1/2016 | pH (field) | 7.21 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 16.85 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.128 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 5.72 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | HT | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 21.7 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 137 | 1500 | mg/L | * | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 3.56 | 32.8 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 1.64 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | HT | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.192 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 204 | -- | mg/L | B | EPA 410.4 |
| | | Biological Oxygen Demand | HT | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 0.44 | 15 | pCi/L | U | EPA 900.0 |
| | | PCBs | 0.00264 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 1.42 | 15 | mg/L | J | SM 9223 B |
| SWSP-36 | 11/22/2016 | pH (field) | 8.1 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 7.3 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.051 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 4.02 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 517.2 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 27 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 64.3 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 0.393 | 11.4 | mg/L | B | EPA 351.2 |
| | | Nitrate + Nitrite | 0.369 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0265 | -- | mg/L | J | EPA 365.4 |
| | | Phosphorous (total) | 0.129 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 50.1 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 10 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 4.81 +/- 1.21 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00322 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 2.18 | 15 | mg/L | J | SM 9223 B |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|----------------|-------------|------------|----------------------|-------------------|
| SWSP-36 | 1/16/2017 | pH (field) | 8.92 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 10.95 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.149 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 11.35 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 1553.1 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 29.3 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 72.9 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.37 | 8.9 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.541 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0495 | -- | mg/L | J | EPA 365.4 |
| | | Phosphorous (total) | 0.0869 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 74.6 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 16 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 6.82+/-1.61 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00208 | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | 2.12 | 15 | mg/L | J | SM 9223 B | | |
| SWSP-36 | 4/25/2017 | pH (field) | 7.52 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 6.49 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.079 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 10.36 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 331 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 32 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 92.9 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 1.95 | 23.4 | mg/L | B | EPA 351.2 |
| | | Nitrate + Nitrite | 0.612 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.126 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.173 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 105 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 18 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 1.53+/-0.502 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00191 | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | 1.33 | 15 | mg/L | J | SM 9223 B | | |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|----------------|-------------|------------|----------------------|-------------------|
| SWSP-36 | 8/1/2017 | pH (field) | 7.02 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 13.38 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.06 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 7.79 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 365.4 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 36 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 58.6 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 0.7 | 38.8 | mg/L | * | EPA 351.2 |
| | | Nitrate + Nitrite | 0.567 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0468 | -- | mg/L | J | EPA 365.4 |
| | | Phosphorous (total) | 0.0429 | -- | mg/L | J | EPA 365.4 |
| | | Chemical Oxugen Demand | 80.3 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 18 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 2.98+/-0.905 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.00358 | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | 1.54 | 15 | mg/L | J | SM 9223 B | | |
| SWSP-36 | 8/30/2017 | pH (field) | 9.3 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 17.94 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.125 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.23 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 602 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | INS | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | INS | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 0.943 | 9.1 | mg/L | N | EPA 351.2 |
| | | Nitrate + Nitrite | 0.663 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | INS | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.31 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 84.7 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 6 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 1.19+/- .651 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | INS | 0.00017 | ug/L | | EPA 1668 C |
| Oil and grease | INS | 15 | mg/L | | SM 9223 B | | |

Table 9.B
Water Quality Results Since Inception of MS4 Permit Coverage

| Sample Location | Sample Date | Analyte | Result | WQ Standard | Unit | Laboratory Qualifier | Analytical Method |
|-----------------|-------------|------------------------------|---------------|-------------|------------|----------------------|-------------------|
| SWSP-36 | 9/28/2017 | pH (field) | 8.55 | 6.6-9.0 | -- | | YSI-556 meter |
| | | T (field) | 9.55 | <32.2 | C | | YSI-556 meter |
| | | Specific Conductance (field) | 0.051 | -- | mmohs/cm | | YSI-556 meter |
| | | DO (field) | 8.97 | >5.0 | mg/L | | YSI-556 meter |
| | | E. coli | 145 | 47 | cfu/100 mL | | SM 9223 B |
| | | Total Suspended Solids | 42 | -- | mg/L | | SM 2540 D |
| | | Total Dissolved Solids | 34.3 | 1500 | mg/L | | SM 2540 C |
| | | Total Kjeldhal Nitrogen | 0.783 | 8.4 | mg/L | | EPA 351.2 |
| | | Nitrate + Nitrite | 0.331 | 132 | mg/L | | EPA 353.2 |
| | | Phosphorous (dissolved) | 0.0587 | -- | mg/L | | EPA 365.4 |
| | | Phosphorous (total) | 0.127 | -- | mg/L | | EPA 365.4 |
| | | Chemical Oxugen Demand | 78.3 | -- | mg/L | | EPA 410.4 |
| | | Biological Oxygen Demand | 16 | -- | mg/L | | SM 5210 B |
| | | Gross Alpha | 3.31+/-0.711 | 15 | pCi/L | | EPA 900.0 |
| | | PCBs | 0.0121 | 0.00017 | ug/L | | EPA 1668 C |
| | | Oil and grease | 3.52 | 15 | mg/L | J | SM 9223 B |

--: No water quality standard applicable to this analyte

*: Recovery or %RPD not within acceptance limits and/or spike amount not compatible with the sample

**: Analyte is a surrogate compound

B: The analyte was found in the blank above the effective MDL

J: Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL

N: Results associated with a spike analysis that was outside control limits

U: The analyte was analyzed for but not detected below the detection limit (see Table 12-3, SWMPP Chapter 12)

HT: sample not analyzed due to hold time violation

INS: insufficient sample volume collected to submit to lab

NS: parameter intentionally not sampled