SECTION 01 3545

WATER DISCHARGE REQUIREMENTS

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LANL MASTER SPECIFICATION SECTION

Word file at <https://engstandards.lanl.gov/>

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| Rev. 8 Summary of Changes: Added neutralization requirements formerly in 22 0816; updated notifications, form. |

This template must be edited for each project. In doing so, specifier must add job-specific requirements. Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer. Once the choice is made or text supplied, remove the brackets. This Section must also be edited to delete specification requirements for processes, items, or designs that are not included in the project -- and specifier’s notes such as these. To seek a variance from requirements that are applicable, contact the Engineering Standards Manual (ESM) Civil [POC](http://engstandards.lanl.gov/POCs.shtml). Please contact POC with suggestions for improvement as well.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General requirements.

As with all LANL Master Specs, LANL must perform all tasks when not subcontracted.  
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1. GENERAL
   1. SECTION INCLUDES
      1. Requirements for all LANL and Subcontractor personnel when there is a planned or accidental discharge of water, including those not covered by a NPDES permit, Ground Water Discharge Permit, or approved Notice of Intent (NOI).
   2. DEFINITIONS
      1. Discharge: Release of water to the environment or sanitary sewer system due to an accidental spill or planned construction or maintenance activity, (e.g., hydrant flushing, potable water piping disinfection, chemical water treatment of piping systems, hydrostatic piping tests).
      2. Best Management Practices (BMPs): Schedules of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. Physical practices to control facility site runoff can be, but are not limited to, silt fences, graveled construction area entry/exit points, dikes, berms, wattles, ground covers, reduced discharge rates, armoring, or other such methods emplaced to eliminate erosion or transport of soil or other contaminants.
2. PRODUCTS
   1. ACCEPTABLE DECHLORINATION (NEUTRALIZING) AGENTS
      1. Use Vitamin C salt (sodium ascorbate, Vita-D-Chlor brand or equal) for discharges to a live stream (as it does not increase the alkalinity and it reduces the dissolved oxygen less than sodium thiosulfate). Sodium thiosulfate (technical grade, prismatic rice) is acceptable for discharges elsewhere.
      2. Sulfur dioxide gas use is not permitted.
3. EXECUTION
   1. CONSTRUCTOR REQUIREMENTS
      1. Discharges to Environment:
         1. Discharges shall not have the reasonable potential to cause or contribute to a violation of an applicable water quality standard.
         2. All planned discharges to the environment must be covered by an existing permit or equivalent authorization prior to conducting the discharge.
         3. Implement BMPs to prevent erosion or adverse environmental impacts from all planned discharges.
         4. Chlorinated water used for disinfection shall be dechlorinated with a neutralizing agent prior to discharge. If discharge is not planned to or could not feasibly reach a watercourse (e.g., flat ground on mesa top), then total chlorine concentration shall be reduced to less than 1 ppm (part per million) (*typically the same concentration as the Safe Drinking Water Act).*
         5. Discharges that have the potential to reach a watercourse shall have a total chlorine concentration less than 0.011 micrograms per liter (µg/L) pursuant to NMAC20.6.4.900.J.
         6. For dechlorinated potable water or line disinfection discharges less than 5,000 gallons, notify LANL Subcontract Technical Representative (STR) at least 5 working days before the planned discharge.
         7. For dechlorinated potable water or line disinfection discharges greater than 5,000 gallons, notify LANL STR at least 45 working days before the planned discharge to enable an NOI to be submitted to NMED.
         8. Contact EPC-CP for evaluation of any other planned discharges to the environment to determine if an NOI must be submitted to NMED prior to the discharge.
      2. Discharges to Sanitary Sewer:
         1. Notify LANL STR prior to any planned discharge to the TA-46 SWWS Facility.
         2. Properly characterize discharges through the Waste Stream Profile (found in the Waste Compliance and Tracking System [WCATS] process) and meet the TA-46 Wastewater Treatment Plant Waste Acceptance Criteria (WAC); refer to LANL Procedure [P409-1](https://int.lanl.gov/policy/facilities-management.shtml), prior to any discharge.
         3. Discharges to the TA-46 SWWS Facility must have an active approved Waste Stream Profile. This includes discharges during construction, startup testing, surrogate testing, and/or operations (e.g., compressors, cooling systems, laboratory sinks, DI water systems) after construction is completed.
      3. Notify LANL STR immediately in the event of any accidental or unplanned discharge.
   2. DECHLORINATION OF DISCHARGES (NEUTRALIZATION)
      1. Provide mixing tank to allow dechlorination of water prior to discharge. Stir in neutralizer crystals allowed per Part 2 manually.
      2. If this is not practical or safe, contact LANL STR for coordination and to arrange for direct injection into chlorinated water discharge pipe using a metering pump or venturi injector.
      3. Approximate dosage rate of neutralizer may be calculated from the following table:

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| Free Chlorine Residual Concentration | Sodium  Ascorbate  (Vita-D-Chlor) | Sodium Thiosulfate |
| 10 mg/L | 2.2 lb/10,000 gal | 1.2 lb/10,000 gal |
| 50 mg/L | 11 lb/10,000 gal | 6 lb/10,000 gal |
| 500 mg/L | 110 lb/10,000 gal | 60 lb/10,000 gal |

* + 1. Do not dose neutralizing chemical beyond the minimum required to neutralize the chlorine actually present in discharge. *Allowable residual chloride varies depending on discharge avenue (watercourse, flat land, or sanitary wastewater system).*
  1. LANL REQUIREMENTS (e.g., STR)
     1. Discharges to the Environment:
        1. Keep a written record of each discharge by project.
        2. For planned discharges of dechlorinated potable water or line disinfection water less than 5,000 gallons, notify LANL’s Environmental Compliance Programs Group (EPC-CP) at least five working days prior to the discharge. Following EPC-CP approval, complete and return the attached LANL Liquid Discharge Form. Discharges will be documented by EPC-CP and submitted to NMED in LANL’s Quarterly Discharge Report.
        3. For planned discharges of dechlorinated potable water or line disinfection water greater than 5,000 gallons, notify LANL EPC-CP Group at least [45 working days] in advance of the planned discharge. EPC-CP will review the proposed discharge to determine if submittal of an NOI is required. If required, EPC-CP will develop and submit the NOI to NMED (NMED has up to 30 working days to respond). The discharge cannot be conducted until NMED approves the NOI.
        4. Contact EPC-CP for evaluation of any other planned discharges to the environment to determine if an NOI must be submitted to NMED prior to the discharge.
     2. Discharges to the Sanitary Sewer:
        1. Characterize discharges using Waste Stream Profile process and meeting the TA-46 Wastewater Treatment Plant Waste Acceptance Criteria (WAC) described in 3.1.B.2 above.
        2. All discharges to the TA-46 SWWS Facility must have an active approved Waste Stream Profile. This includes discharges during construction, startup testing, surrogate testing, and/or operations (e.g., compressors, cooling systems, laboratory sinks, DI water systems) after construction is completed.
        3. Notify the LANL EPC-CP Group’s pager immediately at 664-7722 in the event of a spill or accidental/unplanned discharge.

END OF SECTION

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DO NOT DELETE THE FOLLOWING REFERENCE INFORMATION:

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THE FOLLOWING STATEMENT IS FOR LANL USE ONLY

This project specification section is based on LANL Master Specification 01 3545, Rev. 8, dated June 9, 2022.

**ATTACHMENT 1**

