Administrative change to 341 MW32-7041, *WATER QUALITY COMPLIANCE*

References to 341 CES/CEVC and 341 CES/CEV are hereby changed to 341 CES/CEIE throughout the publication.

References to 341st Civil Engineer Squadron/Environmental Flight Compliance are hereby changed to 341st Civil Engineer Squadron/Installation Management Environmental throughout the publication.

OPR: 341 CES/CEIE

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341ST MISSILE WING

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WATER QUALITY COMPLIANCE

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This publication supplements AFI 32-7041, 10 December 2003, and defines specific details of the Air Force Water Quality Compliance Program. 341SWI32-7001, *Controlling Industrial Waste Discharge to Sanitary Systems,* 13 May 2004, is superseded and rescinded. This supplement applies to all personnel, military, civilian, and contractors, assigned to or contracted with Malmstrom AFB. It does not apply to the US Air Force Reserve or Air National Guard. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, **Recommendation for Change of Publication**; route AF Form 847 through the wing publishing office. Records created as a result of prescribed processes in this publication are maintained in accordance with applicable AFIs, and disposed of as indicated in the Records Disposition Schedule available at https://afrims.amc.af.mil. Contact your local Functional Area Records Manager for further information.

SUMMARY OF CHANGES

This publication has been significantly revised and must be completely reviewed. This supplement incorporates the requirements for controlling industrial waste discharges to the

sanitary sewers, which were previously located in 341SWI32-7001. Changes from the previous edition are marked with a margin bar (|).

1.3.10.1.1. (Added) Ensure that generated hazardous waste products are not discharged, but are properly collected, segregated, stored, and disposed of according to applicable regulations.

1.3.10.1.2. (Added) Inform the Utilities Shop of needed service or maintenance.

1.3.10.1.3. (Added) Assume responsibility to maintain all building oil-water separators, grease traps, trench drains, sand traps, etc., in good, clean working order.

1.3.10.3.1. (Added) Publish local operating instructions for pollution control facilities.

1.3.10.3.2. (Added) Establish recurring training programs to qualify supervisors and technicians to operate treatment facilities. Make sure all plant personnel are aware of safety requirements.

1.3.10.3.3. (Added) Maintain pretreatment facility manuals as required.

1.3.10.3.4. (Added) Maintain adequate resources for equipment, supplies, and certified operators to operate pretreatment facilities where required.

1.3.10.3.5. (Added) Maintain facility operating logs, records, and drawings.

1.3.10.3.6. (Added) Pump out full storage tanks, cleanup of oil/water separator facilities, or equipment adjustments, and repairs, etc.

2.2.3.2.1 (Added) Strict compliance with the current City of Great Falls Sanitary Sewer ordinance or Industrial Wastewater Discharge Permit issued to Malmstrom AFB is critical since the City of Great Falls wastewater treatment plant is not capable of treating all types of waste produced at Malmstrom AFB. These regulations describe what limitations have been placed on the wastewater discharge from the base and what pretreatment facilities may be needed to meet these limitations. Air Force Policy is to eliminate oil/water separators where possible, with new installation only recommended where required to meet compliance regulations. Installation maintenance activities should consider process changes to eliminate the perceived need for oil/water separators and floor drains where possible.

2.2.3.2.2. (Added) Air Force Base wastes may contain high amounts of solvents, sludge, oils, grease, fuels, and other petroleum products, acids, alkalis, etc. These wastes should not be discharged into the sanitary sewer system and in turn to the City of Great Falls wastewater treatment plant. Dispose of these wastes through the Environmental Flight. Refer to the *Malmstrom Air Force Base Hazardous Waste Management Plan* for proper handling of the products. Do not discharge any wastes that can cause a fire danger, explosion, or damage to the sewer pipe. Some wastes can be retreated and discharged to the sanitary sewer, although pretreatment may not be cost effective depending on the amount of waste generated and the capital and operating costs for the pretreatment facilities.

2.2.3.2.3. (Added) Dumping toxic wastes, hazardous wastes, or petroleum on the ground is strictly prohibited. Organizations generating waste products shall process all wastes in accordance with the Hazardous Waste Management Plan.

2.2.3.2.4. (Added) Food processing grease collected from grease traps or collected directly from cooking units such as French fry cooking units, shall be stored outside each food service facility in a grease container. Do not discharge the waste grease down the sanitary sewer or with the garbage.

2.9.1.1. (Added) The following regulations set limitations on liquid waste discharged to sanitary sewer system. Refer to the current City of Great Falls Sanitary Sewer Ordinance-Chapter *13.20-Sewer System-Regulations, Article II, General Discharge Prohibitions*, regarding wastewater discharge to the sanitary sewer system. Also refer to the City of Great Falls, "Permit to Discharge Industrial Wastewater" for Malmstrom Air Force Base regarding sewer system permitted discharge limits. All of these regulations set restrictions on the wastewater discharge from the base into the sanitary sewer system. Any additions or updates to these regulations are to be considered part of this plan for compliance purposes. To view the above, contact the Environmental Flight.

2.9.1.2. (Added) Oil and Grease require proper handling. Domestic wastewater treatment plants are not designed to remove large amounts of oil and grease. Oil and grease should be removed from the waste, containerized, and disposed of properly. Contact Environmental Flight for disposal of the containerized material.

2.9.1.3. (Added) Settleable Solids require proper handling. Settleable solids can build up and block the sewer. The solids may then break down in the pipes and form hydrogen sulfide and methane gas. Wastewater with a high amount of settleable solids may overload the treatment capacity of the plant. Don't discharge any waste containing more than 0.5% settleable solids. Solids material should be containerized. Contact the Environmental Flight for disposal of the containerized material.

2.9.1.4. (Added) Heavy Metals such as chromium, cadmium, and mercury are toxic to biological treatment units and biological life in receiving waters. These metals can also hurt the quality of drinking water intakes downstream of the treatment plant. This would include all the towns and cities below Great Falls using the Missouri River for drinking water. Containerize the material and contact the Environmental Flight for disposal.

2.9.2.1. (Added) Flammable liquids require proper handling. Examples of flammable liquids include motor vehicle gasoline (Mogas), jet fuel, lube oil, fuel oil, kerosene, benzene, naphtha, and mineral oil Leaks, spills, or discharges of these liquids into the sewer system can collect in pump station wet wells, pipelines, and collection and treatment facilities. This condition can result in development of an explosive atmosphere and a safety hazard. Areas containing these types of flammable liquids should be dried up by pumping or by using absorbent materials as applicable. Dispose of properly.

2.9.3.1. (Added) Acids and alkalis can corrode pipes and kill the stabilizing bacteria in a biological treatment plant. Sulfate salts (even at a neutral pH) may corrode parts of the system when the sulfate is reduced to sulfide and then oxidized to form sulfuric acid. Containerize the material and contact the Environmental Flight for disposal.

2.9.3.2. (Added) Toxic gases such as hydrogen sulfide, methane, and hydrogen cyanide, are often present or may form in industrial wastewater. Hydrogen sulfide and methane also form in domestic wastewater. Wastewater with high amounts of sulfides can cause problems in anaerobic digesters in wastewater treatment plants because they can form hydrogen sulfide gas. Containerize these materials and contact the Environmental Flight for disposal.

2.9.3.3. (Added) Organic Toxins such as pesticides and other vary toxic substances should not be discharged to the treatment plant. Even though in small quantities they may not damage the biological life in the wastewater treatment plant, organic toxins can still damage the receiving water. Containerize these materials and contact the Environmental Flight for disposal.

2.10.3.1. (Added) Oil/water separators are designed to capture and separate residual oils and fuel from drains and wash rack facilities, or to capture accidental spills. They are not to be used for collecting or holding pure waste fuel or oil products.

2.10.3.2. (Added) The introduction of any substance into an oil/water separator must be through the conduit or pipeline designed for that purpose, never through the inspection man way, vent pipe, or other opening at the top of the separator.

2.10.3.3. (Added) Discharge of water or oil/water mixtures into an oil/water separator must not exceed the separator flow rate or storage capacity.

2.10.3.4. (Added) Nothing shall be discharged into an oil/water separator after the oil/fuel storage capacity has been reached.

2.10.5.1. (Added) Gravity separation of mixtures of oil/fuel and water depends on the difference in specific gravity of oil/fuel and water. Oil and fuel rise to the surface and heavy solids settle to the bottom. Oil skimmings and sludges are removed from time to time. Separators must be checked often, depending on the volume and nature of wastes, to ensure that baffles and skimmers are properly placed and working right. Oil holding tanks must be checked on a regular schedule to prevent an overflow of waste oil from getting into the sanitary sewer. Buildups of oil should be pumped off on a regular schedule. Oil emulsions (mixtures of oil and water) cannot be removed by gravity separation alone and require chemical or other treatment.

2.10.5.2. (Added) The ability of oil/water separators to function properly depends upon the application of required routine service and maintenance. Some wastewater requires more than gravity separation. These wastes may have to be segregated with provisions for adequate pretreatment prior to introducing them into the domestic wastewater system. The following minimum criteria shall be adhered to for oil/water separators and pretreatment of industrial wastewater.

2.10.5.2.1. (Added) Personnel responsible for managing oil/water separators must be qualified. The Utilities Shop is responsible for maintenance of all oil/water separators. These personnel should be familiar with all appropriate federal, state, and local regulations pertaining to separators. The Environmental Flight personnel will be familiar with all appropriate federal, state, and local regulations to provide oversight to the Utilities Shop personnel.

2.10.5.2.2. (Added) A base map with all units clearly marked shall be maintained within the Utilities Shop. The Engineering /Drafting Section shall maintain maps, diagrams, construction layouts, and detailed information all separators and holding tanks. Oil/water separator units should be inspected on regular schedule, as determined by usage, and observed data recorded. Inspection of the oil/water separator is the responsibility of the Utilities Shop. Each facility manager shall notify the Maintenance Engineering Section (341 CES/CEOE) if he or she determines that the oil/water separator or storage tank requires maintenance or pumping. The inspection done by the Utilities Shop may include based on manufactures recommendation the following:

2.10.5.2.2.1. (Added) Check effluent chamber to ensure no free oils, fuels, or greases are being passed to the effluent. Record findings.

2.10.5.2.2.2. (Added) Check the rotary skim pipe to ensure the open slot of the pipe is set slightly higher than the maximum water level. Adjust if necessary and record findings or adjustments.

2.10.5.2.2.3. (Added) Observe the accumulation of sludge in all the chambers. Record the depth of sludge.

2.10.5.2.2.4. (Added) Check the oil collection chamber or separate storage tanks to see if oil removal is needed and record the level.

2.10.5.2.2.5. (Added) Observe all valves, piping, and pumps associated with the separator systems for adjustments, breaks, leaks, or obstructions. Record findings.

2.10.5.2.2.6. (Added) Prior to disposing of any liquid waste from a separator facility, the waste should be lab tested if it is suspected of containing hazardous waste. All sampling and testing shall be done by 341 CES/CEV. Refer to 40 CFR 403, *General Pretreatment Regulation for Existing and New Sources of Pollution, Appendix B, Toxic Pollutants* and 40 CFR 261, *Identification and Listing of Hazardous Waste,* for sampling and testing requirements.

2.10.5.2.3. (Added) A maintenance schedule to service oil/water separators for oil/grease and sludge removal will be based on actual observed needs.

2.10.5.2.4. (Added) Sludge shall be removed when the sludge volume in the separator equals 20% of the holding capacity. To allow further accumulation will significantly reduce the unit's efficiency. The Maintenance Engineering service contract shall provide for evacuation of waste material and cleaning of these facilities as required.

2.10.5.2.5. (Added) The correct water level shall be maintained in the oil/water separators at all times. When a unit has been serviced (cleaned out), it must be refilled with water to the proper level. The static water level shall be maintained within 1 to 2 inches of the oil skimming device or such that the water level nears the overflow condition of the effluent chamber.

2.10.5.3. (Added) The term "grease" includes the fats, oils, and waxes found in wastewater. These wastes often come from kitchen cleaning and vehicle storage and maintenance operations. If discharged in large amounts, they may cling to the walls of collection systems and treatment plant structures and form scum in clarifiers. In extreme cases, they may coat the slime of trickling filters or flows of activated sludge plants and slow the oxygen transfer. Most fatty-type substances degrade very slowly and may build up to a thickness of many feet in sludge digesters. Fats and grease put down the sink accumulate in the sewage system and cause blockages, especially in cold weather. Even when running hot water down the sink, the fats congeal and coagulate as soon as they hit the cold section of the pipe, sometimes just a few feet away from the building.

2.10.5.3.1. (Added) Grease Traps shall be used on all food services facilities at Malmstrom AFB to retain the grease before the waste is discharged to the sanitary sewer. No grease shall be discharged directly to the building sewer from any food service without first going through a grease trap. Waste grease from cooking units such as french fry units shall be drained into separate containers and stored in fly-tight containers located outside the building for separate collection. A contract service is used at Malmstrom AFB for separate collection of this waste grease.

2.10.5.3.2. (Added) Home occupants on base also need to handle grease waste properly. Household fats and greases shall be dumped into sealed containers such as plastic bottles or cans with sealed lids after cooling. These containers can then be placed into the garbage can along with regular household garbage. This does not apply to food service wastes. Cooking greases should never be discharged down the sink, toilet, or any drain as a means of disposal.

2.10.5.4. (Added) The manager of each facility is responsible for frequent cleaning of their grease traps in order to prevent grease buildup and washout to the sanitary sewer. All grease traps should be frequently inspected to determine maintenance requirements. Malmstrom AFB is required to meet oil and grease maximum contaminant level of 100 milligrams per liter (mg/l). Domestic grease waste must be handled properly in order that this regulatory level can be met on a continuing basis.

2.12.1 (Added) The Spill Prevention, Control, and Countermeasures (SPCC) Plan documents the procedures for the prevention, response, control, and reporting of spills and must be complied with by all SPCC organizations associated with Malmstrom AFB.

2.12.2 (Added) A SPCC organization is an organization that stores or uses oil in containers or equipment with a capacity of 55 gallons or more. This includes Malmstrom AFB organizations as well as tenants and contractors. All contractors are required to have their own SPCC plans if they exceed the SPCC oil storage capacity thresholds. SPCC organizations are required to engage in spill prevention activities, which include but are not limited to routine inspections of

equipment and storage containers. SPCC organizations are required to engage in spill response and cleanup activities for small spills that they are capable of safely working. A SPCC organization must verify inventory in the SPCC and notify 341 CES/CEV when purchasing or installing new storage containers for oil or taking containers out of service.

2.12.3 (Added) SPCC organizations must designate a person responsible for the management of oil within their organization. This designated person reports to facility management and is referred to as the SPCC coordinator. The SPCC coordinator must ensure that personnel who handle oil receive spill prevention training on an annual basis.

2.12.4 (Added) All SPCC organizations are responsible for understanding the SPCC plan. Contact the SPCC plan office of primary responsibility at 341 CES/CEV, for a copy.

2.14.1.1. (Added) Each of the Missile Alert Facilities (MAFs) has a sewage lagoon. Each of these lagoons shall be managed as follows:

2.14.1.1.1. (Added) Cooking oils used in the facility's french fry units is to be collected on a periodic bases and brought back to the base for proper disposal. The MAF personnel are to place the used cooking oils/grease into the grease dumpster located outside the Elkhorn dining facility on base. Cooking oil/grease generated during cooking at the MAF is not to be discharged into the lagoon for the same reasons as listed in the earlier discussions concerning adverse effects on the biological process of the digestion occurring in the lagoons which is similar to that of a wastewater treatment plant.

2.14.1.1.2. (Added) When closing of a MAF lagoon is necessary, an EPA Region VIII Biosolid permit is required to either land apply the sludge or to place it in an landfill. Please contact CES/CEV when planning to close a lagoon at a MAF.

2.15.3.1. (Added) Malmstrom AFB has septic systems at the Weapon Storage Area, CATM, MXS Handling, Rivet Mile, Red Horse, Camp Grizzly, Dog Kennels(bldg 1887), Base Radio(bldg 1879) and Pow Wow Park. These systems should be managed similarly to other sewage system, in that care should be taken as to types of materials discharged to the systems. These systems require regular maintenance and should be checked for required pumping.

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