

**REPORT OF COMPLIANCE SAMPLING INSPECTION (CSI) &
INDUSTRIAL STORMWATER
COMPLIANCE EVALUATION INSPECTION (CEI)**

AT

**Winnebago Industries, Inc.
605 W. Crystal Lake Road
Forest City, IA 50436**

NPDES NO: IA0067229
STATE PERMIT NO: 4100112

September 26-29, 2022

BY

**U. S. ENVIRONMENTAL PROTECTION AGENCY
Region 7
Enforcement and Compliance Assurance Division (ECAD)**

INTRODUCTION

At the request of the Enforcement and Compliance Assurance Division, Water Branch, I conducted a Compliance Sampling Inspection and an Industrial Stormwater Compliance Evaluation Inspection at Winnebago Industries, Inc. on September 26-29, 2022. The inspection was conducted under the authority of Section 308 of the Clean Water Act (as amended) and in accordance with EPA Region 7 Standard Operating Procedures. This narrative report and attachments present the results of the inspection.

PARTICIPANTS

Winnebago Industries

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INSPECTION PROCEDURES

I arrived unannounced at Winnebago Industries, Inc Corp at 1:50 p.m. on September 26, 2022, and I introduced myself to Mr. Venzke. I presented my credentials and then had a short entrance meeting explaining the purpose and procedures of the inspection. During the entrance meeting, I explained to facility personnel that I was going to conduct an inspection based on the requirements of the facility's National Pollutant Discharge Elimination System (NPDES) and the IDNR NPDES General Permit No. 1. I explained that I would complete a full walk-through inspection of the facility, complete a record review as necessary, and collect samples each day. During my inspection, I completed the Water Compliance Inspection Report (attachment 1a) and a facility walk-through with photos (attachment 2).

SAMPLING PROCEDURES

From September 26, 2022, through September 29, 2022, I used an ISCO model 3700 automatic composite sampler to collect 24-hour composite samples of the effluent from outfall 801. I connected my sampler to the facility's suction tube that was connected to the treatment system's discharge point. I programmed it to collect evenly spaced aliquots every 30 minutes into a clean Nalgene bottle, which was packed in ice. I returned each day to service the sampler. I removed the bottle, agitated its contents and poured them into clean, pre-labeled polyethylene or glass containers as needed for the analysis of oil and grease (O&G), non-filterable solids (NFS), metals and Cyanide (CN). At the time of sampling, I preserved the metals samples with nitric acid (HNO₃) and the O&G samples with hydrochloric acid (HCl). Each day I collected a grab sample from the same location to measure the pH and temperature using a field meter. The analyses using a field meter were conducted within 15 minutes of collecting the sample. Flow numbers were determined by collecting the facility's daily flow data during my inspection.

From September 26, 2022, through September 29, 2022, I used an ISCO model 3700 automatic composite sampler to collect 24-hour composite samples of the effluent from outfall 802. I inserted new Tygon tubing into the effluent pipe. I connected the other end to the sampler pump and programmed it to collect evenly spaced aliquots every 30 minutes into a clean Nalgene bottle, which was packed in ice. I returned each day to service the sampler. I removed the bottle, agitated its contents and poured them into clean, pre-labeled polyethylene or glass containers as needed for the analysis of oil and grease (O&G), non-filterable solids (NFS), metals and Cyanide (CN). At the time of sampling, I preserved the metals samples with nitric acid (HNO₃) and the O&G samples with hydrochloric acid (HCl). Each day I collected a grab sample from the same location to measure the pH and temperature using a field meter. The analyses using a field meter were conducted within 15 minutes of collecting the sample. Flow numbers were determined by collecting the facility's daily flow data during my inspection.

For the first day of sampling, I placed the samples I collected on ice in an insulated cooler, sealed the container, and shipped it overnight to the EPA Region 7 Science and Technology Center (STC) for analysis. On the third and final day of sampling, I placed the samples on ice in an insulated cooler, sealed the container, and delivered it to the STC. Electronic field sheets and electronic chain of custody forms were emailed to the STC each day after samples were shipped or delivered. I followed Region 7 Laboratory Services and Applied Science Division (LSASD) standard operating procedures in the collection, packaging, transportation, and handling of the

samples.

FACILITY DESCRIPTION

Winnebago is a facility that manufactures and assembles motor homes. The manufacturing process includes construction of steel and aluminum framing, with on-site aluminum extrusion. Additional facility operations include molded plastics and fiberglass parts, fabrication and assembly of wood parts, painting and assembly. After assembly, motor homes are stored on-site until shipment. The facility produces approximately 9500 units per year and employs approximately 2000 people. Process wastewater is treated at the facility through two on-site wastewater treatment systems. All process water is purchased from the City of Forest City. Process wastewater and sanitary wastewater all flow to a two-cell lagoon system prior to discharge (attachment 3).

Outfalls 801 and 802 are internal outfalls that discharge only process wastewater. Outfall 801 discharges process wastewater from the metal finishing area and outfall 802 discharges wastewater from the aluminum finishing (E-coat) area. Outfall 001 discharges wastewater from a two-cell lagoon treatment system (photo 33). The two-cell lagoon receives wastewater from outfall 801, outfall 802 and all sanitary wastewater generated on-site. The lagoon system also receives wastewater from the 3M facility across the road that Winnebago used to own.

The facility also has permit coverage under the IDNR General Permit No. 1, 'Stormwater Discharge Associated with Industrial Activity.' The facility estimates the manufacturing site to be 180 acres, and they have identified seven stormwater outfalls, numbered 001-007.

Winnebago is located on the south side of Forest City, Iowa. The latitude and longitude of the plant are 43.249299 and -93.643711, respectively, in Winnebago County, Iowa.

The facility's NPDES Permit IA0067229 was issued on July 1, 2020 (attachment 4). The permit expires on June 30, 2025. The facility's permit includes effluent limits for carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), zinc (ZN), acute toxicity, pH and total nitrogen (TN) for outfall 001. The permit includes effluent limits for TSS, ZN, chromium (CR), CN, nickel (NI), O&G, Silver (AG), total toxic organics (TTO), copper (CU), lead (PB) and pH for outfall 801. The permit includes effluent limits for TSS, aluminum (AL) ZN, CR, CN, CN, O&G, and pH for outfall 802.

The facility was last inspected by the IDNR on March 15, 2022 (attachment 5). The inspection report findings included infrequent effluent limit violations. The report listed requirements for the facility to meet all effluent limits in their permit, report all instances of non-compliance, include TTO certification statement with discharge monitoring report (DMR) submittals, use an appropriate signatory authority, install warning signs at the lagoons, install a fence around the lagoons, maintain correct records, correct the 12/7/2019 DMR, and ensure ice covered lagoons are monitored for cell depth.

FINDINGS AND OBSERVATIONS

The following findings were noted during the plant and record review.

Self-Monitoring Data Review

Prior to the inspection, I obtained a spreadsheet of the DMR data for Winnebago Industries from the Region 7 (R7) Data Team. The spreadsheet contained the information requested from January 2018 through August 2022. I also obtained a list of effluent limit violations from 2019 through 2022 from IDNR. The facility had copies of the remaining DMRs on site. All DMR data obtained for this report can be found on ECAD's official electronic file management system. The facility had 17 effluent violations from January 2018 through August 2022 (Table 1). This was noted as item #1 on the Notice of Preliminary Findings (NOPF) that was left on-site. It is to be noted that the facility's effluent violations for pH levels at outfall 802 all occurred under the previous permit. The previous permit had a pH range of 7.5 - 9.0, while the current permit has a wider pH range of 7.0 - 9.0. The facility's permit rationale (attachment 6) states that the permit writer "was unable to discern an explanation for the minimum pH limit being set at 7.5." These pH violations would not have been considered violations under the current permit with the wider pH range.

Table 1: Reported Effluent Exceedances:

Date	Outfall	Parameter	Reported Values	Limits
5/15/18	802	pH	7.17	7.5 (lower)
9/13/19	802	pH	7.3	7.5 (lower)
11/20/19	802	pH	7.1	7.5 (lower)
10/15/20	802	ZN	0.042	0.024 lbs/day
1/14/21	802	AL	0.144	0.129 lbs/day
1/14/21	802	ZN	0.030	0.024 lbs/day
3/12/21	802	ZN	0.062	0.024 lbs/day
3/12/21	802	ZN	0.062	0.057 lbs/day
6/10/21	001	pH	9.3	9.0 (upper)
7/14/21	802	ZN	0.029	0.024 lbs/day
10/13/21	802	AL	0.129	0.156 lbs/day
12/10/21	802	AL	0.129	0.314 lbs/day
12/10/21	802	AL	0.252	0.880 lbs/day
12/10/21	802	TSS	2.235	4.921 lbs/day
12/10/21	802	TSS	4.698	4.921 lbs/day
4/12/22	801	TSS	31.0	60 mg/L
4/12/22	802	ZN	0.024	0.025 lbs/day

Sample Results

The analytical results from the inspection were received on December 24, 2022, from the Region 7 STC laboratory (attachment 7). This data was not discussed during the exit interview. At the time of inspection, the facility was not discharging from outfall 001, thus no samples were collected at outfall 001. Discharges from outfalls 801 and 802 are controlled batch discharges and occur approximately every other day. Thus, no samples were collected from outfalls 801 or 802 on September 28, 2022 due to no discharge. The analytical results for the samples I collected are presented in Tables 2 & 3 below. Results for pH and temperature are field measurements collected by me at the time of my inspection. Flow measurements were measured by facility instruments and given to me by facility personnel.

As described in attachment 7, for results followed by a J, the analyte is acceptable; the reported value is an estimate. For results followed by a U, the analyte was not detected at or above the reporting limit. The number that is shown is the reporting limit.

Table 2: Analytical Results for Effluent Samples Collected During Inspection at Outfall 801

Parameter	(Sept 27) Sample # 1	(Sept 28) Sample # 2	(Sept 29) Sample # 3	Permit Limits ¹ (Daily)
TSS (mg/L)	7.08	NA	-	60 mg/L
O&G (mg/L)	-	NA	-	52 mg/L
ZN (ug/L)	-	NA	-	2.61 mg/L
CD (ug/L)	-	NA	-	0.69 mg/L
CR (ug/L)	-	NA	-	2.77 mg/L
CN (ug/L)	-	NA	-	1.2 mg/L
NI (ug/L)	-	NA	-	3.98 mg/L
AG (ug/L)	-	NA	-	0.43 mg/L
CU (ug/L)	-	NA	-	3.38 mg/L
pH (S.U.)	7.05	NA	7.12	7.0-9.0 S.U.
Temp (°C)	21.4	NA	19.9	NA
Flow (MGD)	0.005	NA	0.005	NA

¹ Permit limits are for Daily Maximums. Permit limits for pH are minimum followed by maximum

²“-” denotes a non-detect result

Table 3: Analytical Results for Influent Samples Collected During Inspection at Outfall 802

Parameter	(Sept 27) Sample # 1	(Sept 28) Sample # 2	(Sept 29) Sample # 3	Permit Limits ¹ (Daily)
TS (ug/L)	-	NA	-	4.698 lbs/dy
O&G (lbs/day)	-	NA	-	2.292 lbs/day
ZN (ug/L)	383 (0.0128 lbs/day)	NA	373 (0.0124 lbs/day)	0.057 lbs/day
CR (ug/L)	-	NA	-	0.017 lbs/day
CN (ug/L)	-	NA	-	0.012 lbs/day
Temp (°C)	22.3	NA	20.1	NA
pH (S.U.)	7.15	NA	7.11	7.0-10.0 S.U.
Flow (MGD)	0.004	NA	0.004	NA

¹ Permit limits are for Daily Maximums. Permit limits for pH are minimum followed by maximum

²“-” denotes a non-detect result

EPA sample results from the inspection did not show any permit exceedances from sampling conducted during the inspection.

Laboratory

The facility utilizes a contract laboratory for all of their analyses except pH and temperature. The facility utilizes Eurofins Environment Testing in Cedar Falls, Iowa. During the inspection, I reviewed laboratory records to ensure that all analyses complied with requirements of 40 CFR part 136. I found that all holding times were met for the analysis reports that I reviewed.

During my inspection, I asked facility personnel if they calibrated the meters used for on-site analyses. Facility personnel on the metal finishing side (outfall 801) stated that they only use pH buffers 7 and 10 for calibration. I also found that the pH 4 calibration buffer had expired in July 2022. Facility personnel found an unexpired pH 4 buffer, but it appeared the expired one was currently being used. I asked if the facility ever reads pH below 7 and facility personnel stated they do. The facility's DMR data also shows that outfall 001 regularly has pH readings below 7.0. I explained that if they are going to read pH below 7, they should be conducting a calibration below 7. I also explained that if they were going to use the pH 4 buffer to calibrate, they must ensure that they are using un-expired product. This was noted as item #2 on the NOPF that was left on-site.

Collection System

The collection systems for outfalls 801 and 802 are direct piping from process discharges in the facility buildings. The collection system for outfall 001 includes sanitary waste from all facility buildings and wastewater from outfalls 801 and 802. Sanitary waste from the 3M warehouse across 335th Street to the south also discharges to the lagoons.

All wastewaters from the facility and the 3M warehouse flow through a parshall flume with a flow meter (photo 8) prior to flowing to the main lift station (photos 7) adjacent to the lagoons. No issues were observed with the main lift station at the time of inspection. The main lift station has an audible and visual alarm along with an auto-dialer that calls facility personnel in case of an emergency. The facility had a contractor installing a fence around the lift station area during my inspection.

The facility has a second lift station at the north end of the facility that pumps wastewater to the main lift station at the lagoons (photos 22-23). No issues were observed with the north lift station at the time of inspections.

Operational and Maintenance

During the inspection, I observed the facility's wastewater treatment system and the facility sampling points (attachment 3). The facility has three different wastewater treatment systems. At outfall 001, the facility has a two-cell lagoon wastewater treatment plant (WWTP). According to Mr. Venzke, the lagoons are operated by the City of Forest City. Wastewater flows from the main lift station (photo 7) to a splitter box and then to the first cell (photos 5-6). The lagoon system has a valve between the two cells that facility personnel stated is typically open, thus the system is typically run in parallel. Cell 2 discharges to outfall 001 which flows to an unnamed creek, referred to as Drainage Ditch #7 in the permit rationale. The lagoon system is operated as

a controlled discharge system. The lagoons were not discharging at the time of inspection, and Mr. Venzke stated that due to the minimal precipitation this year, there were no plans to discharge in the fall of 2022.

The lagoons are riprapped most of the way around the inside of the berms with concrete in some areas (photos 1-3). Mr. Venzke stated that the facility has been riprapping a section of the lagoons each year trying to riprap the entirety of the inside of the berms. The first cell (west) has been completed, and Mr. Venzke stated that the facility would riprap the last section of the second cell (east) in 2023.

The lagoons are operated on a controlled discharge process. The facility measures and ensures there is enough water in the lagoon and enough freeboard in the lagoon. At the time of inspection, there was approximately three feet of water in the lagoon and four feet of freeboard. At the time of inspection, the facility was not discharging from outfall 001, so no samples were taken.

The facility has two industrial wastewater treatment systems that flow to outfalls 801 and 802. The metal finishing process, also referred to the E-coat system, treatment system (photos 16-18) begins with all wastewater from the process flowing to an equalization (EQ) tank. From the EQ tank, wastewater is pumped to tank 1, with the addition of a coagulant, lowering the pH to 5.5. From tank 1, water flows to tank 2 where caustic soda is added to bring the pH back up to 11.5. Water then flows to a clarifier with the addition of a flocculant and then flows to a pH adjustment tank. pH is tested to ensure it is within effluent limit ranges and adjusted to 7.5. Wastewater then flows through a bag filter (changed monthly) and then through a cartridge filter. From the cartridge filter, wastewater flows to outfall 801. Solids from the clarifier go through a filter press and excess water from the filter press flows back through the treatment process.

The aluminum finishing process, also referred to as CAPCO, treatment system (photos 9-13) begins with all wastewater from the process flowing to an EQ tank. Wastewater in the EQ tank comes in with a pH between 9 and 10. From the EQ tank, wastewater is pumped to the treatment tanks where sulfuric acid is added to lower the pH to 8.5. Once the pH is lowered, a coagulant is added and mixed for approximately 10 minutes. After the mixing process is complete, a flocculant is added, and the wastewater is allowed to settle over-night. Top water from the tank is discharged the next day through a 10-micron and then a 50-micron canister filter. The discharge is immediately tested for pH, aluminum and zinc for process control. The rest of the wastewater is discharged to outfall 802, if the sample analysis comes back at acceptable levels. If the results are not acceptable, the facility will either discharge only enough to stay within their mass-based limits, or they will send it back to the front of the treatment system to be re-treated. The discharge continues until there is approximately 1200-1500 gallons of wastewater left in the tank. The last 1200-1500 gallons of the tank is then discharged to a sludge thickening tank (photo 10) where it is allowed to thicken before being pumped through a filter press (photo 9). Excess water from the filter press flows back through the treatment process.

Sludge

Sludge from the filter press at the metal finishing process wastewater treatment system is disposed of in the regular trash. The facility samples the waste sludge and Mr. Venzke stated that

the facility has made a determination that the sludge is non-hazardous waste (attachment 8).

Sludge from the filter press at the aluminum finishing process wastewater treatment system has been determined to be a F019 listed hazardous waste. This waste stream is disposed of using Tradebe Treatment and Recycling (attachment 9).

The facility has not removed solids from the lagoons for over 10 years Mr. Venzke stated that the facility has measured sludge and does not foresee the facility needing to remove solids for many years.

Stormwater

During the inspection, I observed the facility's stormwater system. Facility personnel provided me with a copy of the facility's Stormwater Pollution Prevention Plan (SWPPP) upon request (attachment 10). The SWPPP that I was given was prepared in January 2021. The facility's permit requires that the SWPPP be updated as needed and implemented. At the time of inspection, it appeared that the facility was adequately implementing their SWPPP. A review of the SWPPP found that the table of contents does not match the SWPPP and the attachments/appendices that were provided. It is suggested that the facility consider this when updating the SWPPP.

After the inspection, while reviewing the SWPPP, I found that a responsible person was not listed in the plan. The facility's permit requires that the SWPPP identify a specific individual or individuals that are responsible for developing and implementing the SWPPP. This is noted as item #8 in the summary of this report.

As described in the facility's SWPPP, the facility is subject to SARA Title III Section 313 due to having water priority chemicals on-site. The facility conducts stormwater sampling at outfalls 002, 003, 005 and 006.

The facility has seven stormwater outfalls listed on the map in their SWPPP. The outfalls are 001-007 (photos 29, 31 & 32). During my inspection I observed all of the facility's stormwater outfalls. On the east side of the facility around outfall 005, I observed weeds growing through trash and debris that had obviously been there for at least one growing season (photo 28). At the southwest end of the sawmill building around the air handlers, I observed a considerable amount of wood dust on the ground (photo 21). I also observed the wood dust around the stormwater inlet nearest to the air handler and wood dust storage area (photo 20). At the east end of the shredder building, I observed a considerable amount of trash and refuse on the ground that was not under cover (photo 24). Mr. Venzke explained that this material was all supposed to be under the covered area, minimizing the exposure to stormwater. The SWPPP also says this material should be under the covered area. At the northwest end of the warehouse, I observed a build-up of sand near one of the stormwater inlets (photo 27). On the northwest end of the facility around the maintenance building, I observed more trash and debris (wood, plastic, etc) on the ground (photo 30). All of these items contributed to item #3 on the NOPF left on-site after the inspection.

The facility has a large area south of 335th Street that is used for employee parking, chassis

storage, clean rubble storage and a test track that is not included in the SWPPP or on the map included with the SWPPP. This area is part of the facility and must be included in the SWPPP. This was noted as item #4 on the NOPF left on-site after the inspection.

While reviewing the SWPPP, I found that the SWPPP does not discuss all of the facility's stormwater controls, specifically the stormwater sewer system and the structural outfalls. Some of the system's stormwater collection system combines to flow to an outfall in drainage ditch #7 near outfall 001 for the wastewater lagoons (photo 33). There were also two additional outfalls on the south end of the large area south of 335th street where the test track is. This was noted as item #5 on the NOPF left on-site after the inspection.

The facility has a third party conduct an annual stormwater inspection. The inspection reports appear to be thorough but do not include any corrective actions for issues found during the inspections. This was noted as item #6 on the NOPF left on-site after the inspection. Also, while reviewing the facility's records, they were unable to produce a record of an annual stormwater inspection for calendar year 2020. This was noted as item #7 on the NOPF. After the inspection, Mr. Venzke determined that an annual inspection was conducted in 2020, and he emailed me a copy of the inspection (attachment 11).

Summary

During the exit briefing on September 29, 2022, I discussed my observations, and I issued a NOPF for the following (attachment 12):

1. Failure to meet effluent limits.
2. Ensure pH meter is calibrated correctly and calibration buffers are not expired.
3. Failure to maintain housekeeping in areas of stormwater exposure.
4. Ensure SWPPP encompasses entire facility.
5. Update SWPPP to match current operations.
6. Ensure corrective actions are documented for annual SWPPP inspections.
7. Failure to conduct annual SWPPP inspection for 2020. (Documentation submitted after the inspection).

Findings determined after the inspection:

8. Failure to include a responsible person in the SWPPP as required by the permit.

The facility responded to the NOPF on October 13, 2022, via e-mail, addressing the preliminary findings observed during the inspection (attachment 13). The facility's response addressed each of the original findings.

**BRIAN
D'ALFONSO**

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Brian D'Alfonso
Life Scientist

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Nicole Moran
Section Chief, WB/DWIS

Attachments:

1. Water Compliance Inspection Report (4 pages)
2. Digital Photographs with Photo Log (19 pages)
3. Site Map (1 page)
4. Winnebago Industries, Inc. NPDES Permit # IA0067229 (20 pages)
5. IDNR March 15, 2022, Compliance Inspection Report (6 pages)
6. NPDES Permit Rationale (29 pages)
7. Laboratory Analytical Report for Project ID BDA2209 (22 pages)
8. E Coat Sludge Analytical Report (12 pages)
9. CAPCO sludge Disposal (4 pages)
10. January 2021, Winnebago SWPPP (21 pages)
11. 2020 Annual Stormwater Inspection Report (20 pages)
12. September 29, 2022, NOPF (1 page)
13. Winnebago October 13, 2022, NOPF email and response (26 page)