Risk Assessment of Categorically-Prohibited Wastewater Discharge

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Case Study – Georgia-Pacific Wood Products, LLC

Regulatory Significance: 40 CFR Part 120

Wood products facilities create wastewaters, some of which, are categorically-prohibited from discharging.

GP had a desire to increase understanding of inherent risks associated with wastewaters generated at wood products facilities.

- GP reached out to Jeffrey McBride and Matt Mixon to aid in the development of an approach to evaluate risks associated with potential discharges of wastewaters from its wood products facilities.

Team Approach to Discharge Probability Evaluation

- For the assessment, the team established criteria for determining the discharge probability as a method of evaluating discharge potential. The criteria for determining discharge probability were compiled into a matrix using the combination of a discharge factor rating and the proximity to discharge.

Example Matrix

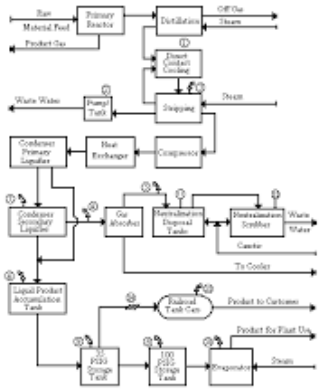
DFR	Proximity to Discharge Location: 1	2	3
5	H	H	H
4	M	M	H
3	L	M	M
2	L	L	L
1	N	L	L

Case Study – Georgia-Pacific Wood Products, LLC

Site Background

Preliminary Review:

- Discharge Permits (storm water and wastewater)
- Aerial Photographs
- Process and Water Flow Diagrams
- Water Usage Data and Reports
- Environmental Compliance Plans (SW3P and SPCC)
- Discharge Monitoring Reports
- Standard Operating Procedures
- Best Management Practices



Site Visit

- Pre-inspection meeting with facility management and operational leads
  - Discussion of risk assessment process
  - Perceived areas of greatest risk
  - Known areas of concern
  - Organized the site inspection by defined operational areas
- Site Inspection – point of wastewater generation through end use (disposal or recycling) location. Included inspection of all piping, pits, transfer pumps, valves, alarms, and containment areas.
- Conducted operational lead interviews to gain understanding of wastewater generation and transferring processes.
- Post-inspection debriefing on site inspection observations with facility management and operational leads

Final Deliverable

- Detailed Risk Assessment Report
  - Discharge Risk Matrix by Operational Area
  - Summary of Recommendations for Risk Reductions by Operational Area
  - Summary of Observations by Operational Area
    - Description of Effluents and Effluent Routing
    - Control Measures
    - Storm Water Impacts
    - SOPs
- Figures package including wastewater piping and transfer diagrams and surface flow direction mapping
- Water Balance Diagrams

Post-Assessment Implementation Process

- Developed Action Items List
  - Engineering Risk Reduction Strategies
    - (Immediate Actions)
  - Procedural and Permitting Risk Reduction Strategies
    - (Planned Improvement Projects)

Post-Assessment Implementation Process

- Engineering Risk Reduction Strategies - BMPs
  - Storm Water Runoff Diversions

Post-Assessment Implementation Process

- Engineering Risk Reduction Strategies - BMPs
  - High level Alarms for Process water and Wastewater basins

Post-Assessment Implementation Process

- Engineering Risk Reduction Strategies - BMPs
  - Non-contact water leak repairs
    - Cooling tower leaks
    - Steam condensate leaks
    - Water metering for leaks

Post-Assessment Implementation Process

- Engineering Risk Reduction Strategies - BMPs
  - Shear Gate Installations

Post-Assessment Implementation Process

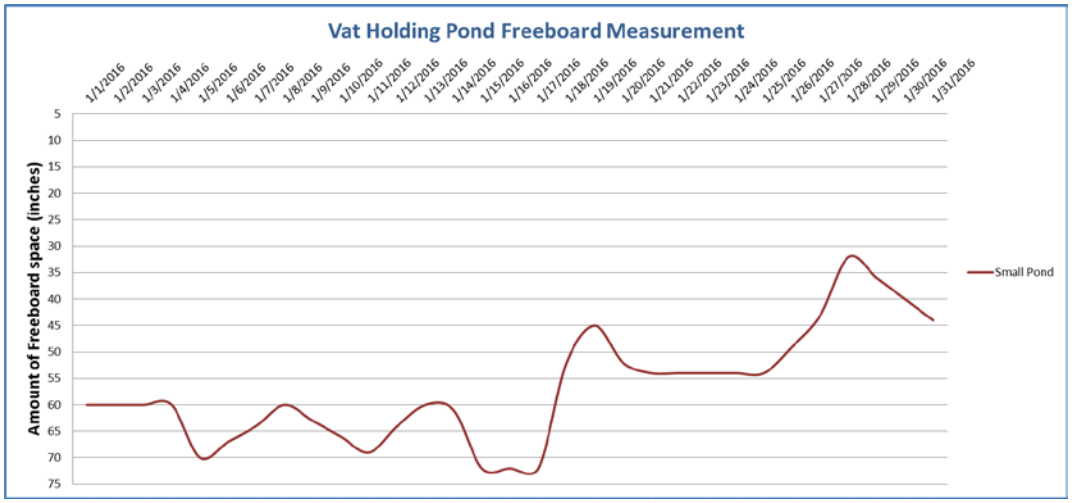
- Engineering Risk Reduction Strategies - BMPs
  - Storm Water Screens

Post-Assessment Implementation Process

- Procedural and Permitting Risk Reduction Strategies
  - Water Transfer Procedural Changes
  - Daily inspections for excess water issues
  - Departmental schedules for pumping process waters

Post-Assessment Implementation Process

- Procedural and Permitting Risk Reduction Strategies
  - Process water balance models and pumping logs



VAT POND PUMPING LOG

VAT HOLDING POND VALVE	Date	OPEN/TIME	CLOSED/TIME	PUMP OPERATING TIME (MIN.)	AMOUNT (GALLONS)	Reason for Pumping	PERSON RECORDING DATA

DATE	Time	Freeboard (inches)		Rainfall (inches)	Freeboard Reduction (inches) Pumping + Rainfall - Evaporation		#6 Vat Daily Evaporation Estimated (Gallons)	Estimated Green Tank Storage (Gallons)
		Large Pond	Small Pond		Large Pond	Small Pond		

Post-Assessment Implementation Process

- Procedural and Permitting Risk Reduction Strategies
  - POTW Permit Modifications (process wastewater segregation to POTW discharges)

Post-Assessment Implementation Process

- Procedural and Permitting Risk Reduction Strategies
  - NPDES Permit Modifications (removing allowable discharges from process water effluents)

Additional Benefits from Implementation

- Energy Reduction
- Waste Reduction
- BMP Sharing from Site to Site
- Operational Flexibility due to Efficiency Gains
- Increase in Working Knowledge of Operations
- Operating Cost Reductions
- Increased Operational Leadership Awareness of Environmental Risks, which Lead to Proactive Risk Reductions

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