

# Fort Edward Landfill - Weekly Operation and Maintenance Checklist

Staff: FZ-MR-JS

Date: 3/3/20

Time: 7:30 AM

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

## HMI SCREENS

| Extraction Wells                                  | Online (Y/N) | Auto     | Manual   | Flow (gpm) | Level (ft)   | (psi)                    |
|---|--------------|----------|----------|------------|--------------|--------------------------|
| Pump Status/Flow                                  | EW-1         | <u>Y</u> | <u>Y</u> | <u>N</u>   | <u>0.0</u>   | <u>14.03</u> <u>0.0</u>  |
| Run pumps in "Manual" to confirm flow, if needed. | EW-2         | <u>Y</u> | <u>Y</u> | <u>N</u>   | <u>0.0</u>   | <u>6.87</u> <u>0.0</u>   |
| Confirm pumps are operating between setpoints     | EW-3         | <u>N</u> | <u>N</u> | <u>N</u>   | <u>0.0</u>   | <u>14.57</u> <u>NA</u>   |
| Confirm pressure with pump cycling & not high/low | EW-4         | <u>Y</u> | <u>Y</u> | <u>N</u>   | <u>23.04</u> | <u>9.94</u> <u>37.25</u> |
| If pumps on, is water flowing into IPC (Y/N)?     | EW-5         | <u>Y</u> | <u>Y</u> | <u>N</u>   | <u>NA</u>    | <u>NA</u>                |

### Process - (Check if OK or fill in values)

|   |    |              |    |            |                                |          |
|---|----|--------------|----|------------|--------------------------------|----------|
| Chlorine Alarm status (on/off)              | A1 | <u>off</u>   | A2 | <u>off</u> | Auto rotate on/off             | <u>Y</u> |
| If on - record chlorine concentration (ppm) |    | <u>-</u>     |    |            | Discharge pump operating       | <u>Y</u> |
| Operate exhaust fan manually                |    | <u>Y</u>     |    |            | Discharge pump pressure normal | <u>Y</u> |
| FT-801 reading (GPM)                        |    | <u>21.80</u> |    |            | Building temp accurate         | <u>Y</u> |
| Chemical rates normal for flow?             |    | <u>Y</u>     |    |            | Mixers operating?              | <u>Y</u> |
| Catch tank display level=actual?            |    | <u>Y</u>     |    |            | Other Alarms (Y/N)             | <u>N</u> |

### Filtration (Check if OK)

|                                  |          |                                       |          |
|----------------------------------|----------|---------------------------------------|----------|
| Air compressor pressure in range | <u>Y</u> | Solenoid status correct for operation | <u>Y</u> |
|----------------------------------|----------|---------------------------------------|----------|

### Data (Check if OK)

|  |          |
|--|----------|
| Do Daily & Yesterday Starts make sense | <u>Y</u> |
|--|----------|

### Alarms

|                                    |          |
|------------------------------------|----------|
| All Alarms Enabled (Y/N)           | <u>Y</u> |
| List any disabled and indicate why |          |

## BUILDING/GROUNDS

### Air Compressor (Check if OK)

|                                  |          |                                  |          |
|----------------------------------|----------|----------------------------------|----------|
| Cycle times normal for load      | <u>✓</u> | Check auto drain operation       | <u>Y</u> |
| Check oil level at least monthly | <u>✓</u> | Check dryer - alarms? Cycling?   | <u>✓</u> |
| Belt tension                     | <u>✓</u> | HX fan operates with compressor? | <u>✓</u> |

### Unit Heaters (Check if OK)

|                                     |          |                                     |           |
|-------------------------------------|----------|-------------------------------------|-----------|
| Thermostats set correctly (50-55 F) | <u>Y</u> | Propane tank level greater than 20% | <u>5%</u> |
| Heaters working                     | <u>Y</u> |                                     |           |

### IPC (Y/N)

|                                  |          |                                 |                 |
|----------------------------------|----------|---------------------------------|-----------------|
| IPC discharge clear?             | <u>Y</u> | Check sludge ports (Sludge Y/N) | <u>Y</u>        |
| Floatables? (take photos if yes) | <u>N</u> | Indicate % of sludge            | Upper <u>50</u> |
| Coag visibly dosing?             | <u>Y</u> | at each port                    | Mid <u>100</u>  |
| Floc visibly dosing?             | <u>Y</u> | Lower                           | <u>100</u>      |

### Chemical Feed (Fill in values)

|                              |              |               |             |             |                   |  |
|------------------------------|--------------|---------------|-------------|-------------|-------------------|--|
| 305 Bleach                   | Height (in)  | <u>24 1/2</u> | mA Signal   | <u>6.0</u>  | Notes             |  |
| 2130 Coagulant               | Height (in)  | <u>15 1/2</u> | Stroke Rate | <u>14.7</u> | Notes             |  |
| 1668 Flocculant              | Volume (gal) | <u>360</u>    | Stroke Rate | <u>81</u>   | Notes             |  |
| Dosing pumps at normal rate? |              | <u>Y</u>      |             |             | Chemicals needed? |  |

### Floor Sumps (Y/N)

|  |          |                                  |                                |            |
|--|----------|----------------------------------|--------------------------------|------------|
| Sump levels normal?                      | <u>Y</u> | Pump runs but not emptying sump? | <u>N</u>                       |            |
| High-High level switches operate freely? | <u>Y</u> | (check monthly)                  | Back flowing after pump cycle? | <u>(N)</u> |
| Excessive sludge/sediment?               | <u>N</u> |                                  |                                |            |

### Diaphragm pumps (Check if OK)

|                             | Thick Feed | Press Feed | Floc Feed |
|-----------------------------|------------|------------|-----------|
| Proper operation/flow       | <u>Y</u>   | <u>Y</u>   | <u>Y</u>  |
| Regulators working properly | <u>Y</u>   | <u>Y</u>   | <u>Y</u>  |
| Exhaust mufflers            | <u>Y</u>   | <u>Y</u>   | <u>Y</u>  |

### Filter Press (Check if OK)

|                                  |          |   |          |
|----------------------------------|----------|---|----------|
| Hydraulic ram operating normally | <u>Y</u> | Sorbent pads replaced?                    | <u>N</u> |
| Hydraulic pressure normal        | <u>Y</u> | How many total filled Haz drums onsite?   | <u>3</u> |
| Significant leaks?               | <u>N</u> | How many Haz drums filled & closed today? | <u>1</u> |

### General/Housekeeping

|  |          |                     |          |                     |          |
|--|----------|---------------------|----------|---------------------|----------|
| Wipe down dirty equipment/piping       | <u>Y</u> | Any leaks?          | <u>N</u> | Waste drums needed? | <u>N</u> |
| Sweep and/or wash floors               | <u>Y</u> | Lights working?     | <u>N</u> | Drum labels needed? | <u>N</u> |
| Fire extinguisher inspection (monthly) | <u>Y</u> | Exit signs working? | <u>Y</u> | Removed trash?      | <u>N</u> |
| Sludge in Clarifier Catch Tank?        | <u>Y</u> |                     |          |                     |          |

### Grounds

|   |  |
|---|--|
| Mow/trim around building, structures, wells, bollards, control panels and cleanouts | Clear woody vegetation from swales and cap |
| Shovel doorways, apply ice melt   | Look for damage fencing/gates              |
| Confirm gates and doorways locked   | Confirm storage container locked           |



# Fort Edward Landfill - Typical Operating Parameters

| Extraction Well | Flow (gpm) | Pressure (psi) | Low-Low | Level (off) | Level (on) | High-High |
|-----------------|------------|----------------|---------|-------------|------------|-----------|
| EW-1            | 20         | 4.5            | 2       | 3           | 10         | 20        |
| EW-2            | 14         | 11             | 1       | 3           | 10         | 25        |
| EW-3            | 20         | NA             | 1       | 3           | 10         | 20        |
| EW-4            | 30         | 20             | 0       | 7           | 10         | 36        |
| EW-5            | NA         | NA             | 1       | 3           | 10         | 20        |

## Clarifier Catch Tank

| Low-Low | Level (off) | Level (on) | High-High |
|---------|-------------|------------|-----------|
| 0.5     | 1           | 2          | 3.25      |

## Chlorine Alarm

A1 means chlorine concentration greater than 0.5 ppm

A1 and A2 means concentration greater than 1.0 ppm

If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light .

| Chemical Dosing Rates | HMI Setpoint | Stroke SP | Hand SP  | Pump Screen |
|-----------------------|--------------|-----------|----------|-------------|
| 305 Bleach            | 0.10%        | 100       | 0.16 gph | 5.4 - 6.5   |
| 2130 Coagulant        | 0.10%        | 96        | 0.16 gph | 12.5 - 12.7 |
| 1668 Flocculant       | 0.20%        | 100       | 2.47 gph | 72 - 75     |

## Discharge Pumps

|                  |               |
|------------------|---------------|
| Typical speed    | 30-100%       |
| Typical pressure | 22 psi @ 100% |

## Air compressor

|                    |  |
|--------------------|--|
| operating range    | 90-175 psi   |
| regulator setpoint | 90 psi   |
| Auto drain         | On 5 seconds every 5 minutes   |
| Dryer              | Display shows "ESA/ON" with dew point level shown on bar scale.<br>Auto drain operates 5 seconds every minute<br>Heat exchanger fan should operate with compressor |

## Regulators

|                        | PSI Range  |
|------------------------|------------|
| Thickener feed pump    | 40 psi max |
| Filter press feed pump | 90 psi max |
| Floc feed pump         | 40 psi     |
| Filter press hyd pump  |            |
| Blowdown               | 90 psi max |

## Notes:

- Found Propane tank @ 5% & contacted ARCADIS & Propane Vendor
- Need to bring Pallets for drums to take old ground.
- Propane Vendor delivered/ Filled tank.



# Fort Edward Landfill - Weekly Operation and Maintenance Checklist

Staff: FZ + ZC

Date: 3/10/20

Time: 8:00

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

## HMI SCREENS

| Extraction Wells                                  | Online (Y/N)  | Auto     | Manual   | Flow (gpm)   | Level (ft)   | (psi)        |
|---|---------------|----------|----------|--------------|--------------|--------------|
| Pump Status/Flow                                  | EW-1 <u>Y</u> | <u>✓</u> | <u>N</u> | <u>0.0</u>   | <u>14.01</u> | <u>0.0</u>   |
| Run pumps in "Manual" to confirm flow, if needed. | EW-2 <u>Y</u> | <u>✓</u> | <u>N</u> | <u>0.0</u>   | <u>4.76</u>  | <u>0.0</u>   |
| Confirm pumps are operating between setpoints     | EW-3 <u>N</u> | <u>N</u> | <u>N</u> | <u>0.0</u>   | <u>14.91</u> | <u>NA</u>    |
| Confirm pressure with pump cycling & not high/low | EW-4 <u>Y</u> | <u>✓</u> | <u>N</u> | <u>23.01</u> | <u>21.25</u> | <u>39.59</u> |
| If pumps on, is water flowing into IPC (Y/N)?     | EW-5 <u>Y</u> | <u>✓</u> | <u>N</u> | <u>NA</u>    | <u>12.56</u> | <u>NA</u>    |

### Process - (Check if OK or fill in values)

|   |               |               |                                |          |
|---|---------------|---------------|--------------------------------|----------|
| Chlorine Alarm status (on/off)              | A1 <u>off</u> | A2 <u>off</u> | Auto rotate on/off             | <u>✓</u> |
| If on - record chlorine concentration (ppm) | <u>-</u>      |               | Discharge pump operating       | <u>✓</u> |
| Operate exhaust fan manually                | <u>✓</u>      |               | Discharge pump pressure normal | <u>✓</u> |
| FT-801 reading (GPM)                        | <u>22.27</u>  |               | Building temp accurate         | <u>✓</u> |
| Chemical rates normal for flow?             | <u>Y</u>      |               | Mixers operating?              | <u>✓</u> |
| Catch tank display level=actual?            | <u>Y</u>      |               | Other Alarms (Y/N)             | <u>N</u> |

### Filtration (Check if OK)

|                                  |          |                                       |          |
|----------------------------------|----------|---------------------------------------|----------|
| Air compressor pressure in range | <u>Y</u> | Solenoid status correct for operation | <u>✓</u> |
|----------------------------------|----------|---------------------------------------|----------|

### Data (Check if OK)

|  |          |
|--|----------|
| Do Daily & Yesterday Starts make sense | <u>Y</u> |
|--|----------|

### Alarms

|                                    |                                       |
|------------------------------------|---------------------------------------|
| All Alarms Enabled (Y/N)           | <u>Y</u>                              |
| List any disabled and indicate why | <u>Power loss why system was down</u> |

## BUILDING/GROUNDS

### Air Compressor (Check if OK)

|                                  |          |                                  |          |
|----------------------------------|----------|----------------------------------|----------|
| Cycle times normal for load      | <u>✓</u> | Check auto drain operation       | <u>✓</u> |
| Check oil level at least monthly | <u>✓</u> | Check dryer - alarms? Cycling?   | <u>✓</u> |
| Belt tension                     | <u>✓</u> | HX fan operates with compressor? | <u>✓</u> |

### Unit Heaters (Check if OK)

|                                     |          |                                     |            |
|-------------------------------------|----------|-------------------------------------|------------|
| Thermostats set correctly (50-55 F) | <u>✓</u> | Propane tank level greater than 20% | <u>65%</u> |
| Heaters working                     | <u>✓</u> |                                     |            |

### IPC (Y/N)

|                                  |          |                                 |                 |
|----------------------------------|----------|---------------------------------|-----------------|
| IPC discharge clear?             | <u>Y</u> | Check sludge ports (Sludge Y/N) | <u>Y</u>        |
| Floatables? (take photos if yes) | <u>N</u> | Indicate % of sludge            | Upper <u>50</u> |
| Coag visibly dosing?             | <u>Y</u> | at each port                    | Mid <u>100</u>  |
| Floc visibly dosing?             | <u>Y</u> | Lower                           | <u>100</u>      |

### Chemical Feed (Fill in values)

|                              |              |               |             |             |                   |  |
|------------------------------|--------------|---------------|-------------|-------------|-------------------|--|
| 305 Bleach                   | Height (in)  | <u>18 1/4</u> | mA Signal   | <u>4.2</u>  | Notes             |  |
| 2130 Coagulant               | Height (in)  | <u>12</u>     | Stroke Rate | <u>14.1</u> | Notes             |  |
| 1668 Flocculant              | Volume (gal) | <u>430</u>    | Stroke Rate | <u>79</u>   | Notes             |  |
| Dosing pumps at normal rate? | <u>Y</u>     |               |             |             | Chemicals needed? |  |

### Floor Sumps (Y/N)

|  |          |                                  |          |
|--|----------|----------------------------------|----------|
| Sump levels normal?                      | <u>Y</u> | Pump runs but not emptying sump? | <u>N</u> |
| High-High level switches operate freely? | <u>Y</u> | (check monthly)                  |          |
| Excessive sludge/sediment?               | <u>N</u> | Back flowing after pump cycle?   | <u>N</u> |

### Diaphragm pumps (Check if OK)

|                             | Thick Feed | Press Feed | Floc Feed |
|-----------------------------|------------|------------|-----------|
| Proper operation/flow       | <u>✓</u>   | <u>Y</u>   | <u>Y</u>  |
| Regulators working properly | <u>✓</u>   | <u>Y</u>   | <u>Y</u>  |
| Exhaust mufflers            | <u>✓</u>   | <u>Y</u>   | <u>Y</u>  |

### Filter Press (Check if OK)

|                                  |          |   |          |
|----------------------------------|----------|---|----------|
| Hydraulic ram operating normally | <u>✓</u> | Sorbent pads replaced?                    | <u>N</u> |
| Hydraulic pressure normal        | <u>✓</u> | How many total filled Haz drums onsite?   | <u>4</u> |
| Significant leaks?               | <u>N</u> | How many Haz drums filled & closed today? | <u>1</u> |

### General/Housekeeping

|  |          |                     |          |                     |          |
|--|----------|---------------------|----------|---------------------|----------|
| Wipe down dirty equipment/piping       | <u>✓</u> | Any leaks?          | <u>N</u> | Waste drums needed? | <u>N</u> |
| Sweep and/or wash floors               | <u>✓</u> | Lights working?     | <u>N</u> | Drum labels needed? | <u>N</u> |
| Fire extinguisher inspection (monthly) | <u>✓</u> | Exit signs working? | <u>Y</u> | Removed trash?      | <u>N</u> |
| Sludge in Clarifier Catch Tank?        | <u>✓</u> |                     |          |                     |          |

### Grounds

|   |  |
|---|--|
| Mow/trim around building, structures, wells, bollards, control panels and cleanouts | Clear woody vegetation from swales and cap |
| Shovel doorways, apply ice melt   | Look for damage fencing/gates              |
| Confirm gates and doorways locked   | Confirm storage container locked           |

# Fort Edward Landfill - Typical Operating Parameters

| Extraction Well             | Flow (gpm) | Pressure (psi) | Low-Low        | Level (off)      | Level (on)      | High-High         |
|-----------------------------|------------|----------------|----------------|------------------|-----------------|-------------------|
| EW-1                        | 20         | 4.5            | 2              | 3                | 10              | 20                |
| EW-2                        | 14         | 11             | 1              | 3                | 10              | 25                |
| EW-3                        | 20         | NA             | 1              | 3                | 10              | 20                |
| EW-4                        | 30         | 20             | 0              | 7                | 10              | 36                |
| EW-5                        | NA         | NA             | 1              | 3                | 10              | 20                |
| <b>Clarifier Catch Tank</b> |            |                | Low-Low<br>0.5 | Level (off)<br>1 | Level (on)<br>2 | High-High<br>3.25 |

## Chlorine Alarm

A1 means chlorine concentration greater than 0.5 ppm

A1 and A2 means concentration greater than 1.0 ppm

If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light .

| Chemical Dosing Rates | HMI Setpoint | Stroke SP | Hand SP  | Pump Screen |
|-----------------------|--------------|-----------|----------|-------------|
| 305 Bleach            | 0.10%        | 100       | 0.16 gph | 5.4 - 6.5   |
| 2130 Coagulant        | 0.10%        | 96        | 0.16 gph | 12.5 - 12.7 |
| 1668 Flocculant       | 0.20%        | 100       | 2.47 gph | 72 - 75     |

## Discharge Pumps

|                  |               |
|------------------|---------------|
| Typical speed    | 30-100%       |
| Typical pressure | 22 psi @ 100% |

## Air compressor

|                    |  |
|--------------------|--|
| operating range    | 90-175 psi   |
| regulator setpoint | 90 psi   |
| Auto drain         | On 5 seconds every 5 minutes   |
| Dryer              | Display shows "ESA/ON" with dew point level shown on bar scale.<br>Auto drain operates 5 seconds every minute<br>Heat exchanger fan should operate with compressor |

## Regulators

|                        | PSI Range  |
|------------------------|------------|
| Thickener feed pump    | 40 psi max |
| Filter press feed pump | 90 psi max |
| Floc feed pump         | 40 psi     |
| Filter press hyd pump  |            |
| Blowdown               | 90 psi max |

## Notes:

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# Fort Edward Landfill - Weekly Operation and Maintenance Checklist

Staff: FZ96C

Date: 3/12/20

Time: 8:00

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

## HMI SCREENS

| Extraction Wells                                  | Online (Y/N) | Auto     | Manual   | Flow (gpm) | Level (ft)   | (psi)        |              |
|---|--------------|----------|----------|------------|--------------|--------------|--------------|
| Pump Status/Flow                                  | EW-1         | <u>Y</u> | <u>✓</u> | <u>N</u>   | <u>0.0</u>   | <u>13.78</u> | <u>0.0</u>   |
| Run pumps in "Manual" to confirm flow, if needed. | EW-2         | <u>Y</u> | <u>✓</u> | <u>N</u>   | <u>0.0</u>   | <u>4.87</u>  | <u>0.0</u>   |
| Confirm pumps are operating between setpoints     | EW-3         | <u>N</u> | <u>N</u> | <u>N</u>   | <u>0.0</u>   | <u>14.82</u> | <u>NA</u>    |
| Confirm pressure with pump cycling & not high/low | EW-4         | <u>Y</u> | <u>✓</u> | <u>N</u>   | <u>20.62</u> | <u>7.90</u>  | <u>34.47</u> |
| If pumps on, is water flowing into IPC (Y/N)?     | EW-5         | <u>Y</u> | <u>✓</u> | <u>N</u>   | <u>NA</u>    | <u>8.73</u>  | <u>NA</u>    |

### Process - (Check if OK or fill in values)

|   |    |              |    |            |                                |          |
|---|----|--------------|----|------------|--------------------------------|----------|
| Chlorine Alarm status (on/off)              | A1 | <u>off</u>   | A2 | <u>off</u> | Auto rotate on/off             | <u>✓</u> |
| If on - record chlorine concentration (ppm) |    | <u>-</u>     |    |            | Discharge pump operating       | <u>✓</u> |
| Operate exhaust fan manually                |    | <u>✓</u>     |    |            | Discharge pump pressure normal | <u>✓</u> |
| FT-801 reading (GPM)                        |    | <u>20.86</u> |    |            | Building temp accurate         | <u>✓</u> |
| Chemical rates normal for flow?             |    | <u>✓</u>     |    |            | Mixers operating?              | <u>✓</u> |
| Catch tank display level=actual?            |    | <u>380</u>   |    |            | Other Alarms (Y/N)             | <u>N</u> |

### Filtration (Check if OK)

|                                  |          |                                       |          |
|----------------------------------|----------|---------------------------------------|----------|
| Air compressor pressure in range | <u>✓</u> | Solenoid status correct for operation | <u>✓</u> |
|----------------------------------|----------|---------------------------------------|----------|

### Data (Check if OK)

|  |          |
|--|----------|
| Do Daily & Yesterday Starts make sense | <u>✓</u> |
|--|----------|

### Alarms

|                                    |          |
|------------------------------------|----------|
| All Alarms Enabled (Y/N)           | <u>Y</u> |
| List any disabled and indicate why | <u></u>  |

## BUILDING/GROUNDS

### Air Compressor (Check if OK)

|                                  |          |                                  |          |
|----------------------------------|----------|----------------------------------|----------|
| Cycle times normal for load      | <u>✓</u> | Check auto drain operation       | <u>✓</u> |
| Check oil level at least monthly | <u>✓</u> | Check dryer - alarms? Cycling?   | <u>✓</u> |
| Belt tension                     | <u>✓</u> | HX fan operates with compressor? | <u>✓</u> |

### Unit Heaters (Check if OK)

|                                     |          |                                     |            |
|-------------------------------------|----------|-------------------------------------|------------|
| Thermostats set correctly (50-55 F) | <u>✓</u> | Propane tank level greater than 20% | <u>57%</u> |
|-------------------------------------|----------|-------------------------------------|------------|

### Heaters working

|  |          |
|--|----------|
|  | <u>✓</u> |
|--|----------|

### IPC (Y/N)

|                                  |          |                                 |             |
|----------------------------------|----------|---------------------------------|-------------|
| IPC discharge clear?             | <u>Y</u> | Check sludge ports (Sludge Y/N) | <u>Y</u>    |
| Floatables? (take photos if yes) | <u>N</u> | Indicate % of sludge            |             |
| Coag visibly dosing?             | <u>Y</u> | at each port                    |             |
| Floc visibly dosing?             | <u>Y</u> | Upper                           |             |
|                                  |          | Mid                             |             |
|                                  |          | Lower                           | <u>100%</u> |

### Chemical Feed (Fill in values)

|                              |              |              |             |             |                   |                         |
|------------------------------|--------------|--------------|-------------|-------------|-------------------|-------------------------|
| 305 Bleach                   | Height (in)  | <u>9 3/8</u> | mA Signal   | <u>5.9</u>  | Notes             | <u>Changed out drum</u> |
| 2130 Coagulant               | Height (in)  | <u>7.78</u>  | Stroke Rate | <u>12.7</u> | Notes             |                         |
| 1668 Flocculant              | Volume (gal) | <u>380</u>   | Stroke Rate | <u>73</u>   | Notes             |                         |
| Dosing pumps at normal rate? |              | <u>✓</u>     |             |             | Chemicals needed? |                         |

### Floor Sumps (Y/N)

|  |          |                                  |  |
|--|----------|----------------------------------|--|
| Sump levels normal?                      | <u>✓</u> | Pump runs but not emptying sump? |  |
| High-High level switches operate freely? | <u>✓</u> | (check monthly)                  |  |
| Excessive sludge/sediment?               | <u>N</u> | Back flowing after pump cycle?   |  |

### Diaphragm pumps (Check if OK)

|                             | Thick Feed | Press Feed | Floc Feed |
|-----------------------------|------------|------------|-----------|
| Proper operation/flow       | <u>✓</u>   | <u>✓</u>   | <u>✓</u>  |
| Regulators working properly | <u>✓</u>   | <u>✓</u>   | <u>✓</u>  |
| Exhaust mufflers            | <u>✓</u>   | <u>✓</u>   | <u>✓</u>  |

### Filter Press (Check if OK)

|                                  |          |   |          |
|----------------------------------|----------|---|----------|
| Hydraulic ram operating normally | <u>✓</u> | Sorbent pads replaced?                    | <u>N</u> |
| Hydraulic pressure normal        | <u>✓</u> | How many total filled Haz drums onsite?   | <u>5</u> |
| Significant leaks?               | <u>Y</u> | How many Haz drums filled & closed today? | <u>1</u> |

### General/Housekeeping

|  |          |                     |          |                     |          |
|--|----------|---------------------|----------|---------------------|----------|
| Wipe down dirty equipment/piping       | <u>✓</u> | Any leaks?          | <u>N</u> | Waste drums needed? | <u>N</u> |
| Sweep and/or wash floors               | <u>✓</u> | Lights working?     | <u>✓</u> | Drum labels needed? | <u>N</u> |
| Fire extinguisher inspection (monthly) | <u>✓</u> | Exit signs working? | <u>✓</u> | Removed trash?      | <u>N</u> |
| Sludge in Clarifier Catch Tank?        | <u>✓</u> |                     |          |                     |          |

### Grounds

|   |  |  |
|---|--|--|
| Mow/trim around building, structures, wells, bollards, control panels and cleanouts |  | Clear woody vegetation from swales and cap |
| Shovel doorways, apply ice melt   |  | Look for damage fencing/gates              |
| Confirm gates and doorways locked   |  | Confirm storage container locked           |

# Fort Edward Landfill - Typical Operating Parameters

| Extraction Well | Flow (gpm) | Pressure (psi) | Low-Low | Level (off) | Level (on) | High-High |
|-----------------|------------|----------------|---------|-------------|------------|-----------|
| EW-1            | 20         | 4.5            | 2       | 3           | 10         | 20        |
| EW-2            | 14         | 11             | 1       | 3           | 10         | 25        |
| EW-3            | 20         | NA             | 1       | 3           | 10         | 20        |
| EW-4            | 30         | 20             | 0       | 7           | 10         | 36        |
| EW-5            | NA         | NA             | 1       | 3           | 10         | 20        |

## Clarifier Catch Tank

| Low-Low | Level (off) | Level (on) | High-High |
|---------|-------------|------------|-----------|
| 0.5     | 1           | 2          | 3.25      |

## Chlorine Alarm

A1 means chlorine concentration greater than 0.5 ppm

A1 and A2 means concentration greater than 1.0 ppm

If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light .

| Chemical Dosing Rates | HMI Setpoint | Stroke SP | Hand SP  | Pump Screen |
|-----------------------|--------------|-----------|----------|-------------|
| 305 Bleach            | 0.10%        | 100       | 0.16 gph | 5.4 - 6.5   |
| 2130 Coagulant        | 0.10%        | 96        | 0.16 gph | 12.5 - 12.7 |
| 1668 Flocculant       | 0.20%        | 100       | 2.47 gph | 72 - 75     |

## Discharge Pumps

|                  |               |
|------------------|---------------|
| Typical speed    | 30-100%       |
| Typical pressure | 22 psi @ 100% |

## Air compressor

|                    |  |
|--------------------|--|
| operating range    | 90-175 psi   |
| regulator setpoint | 90 psi   |
| Auto drain         | On 5 seconds every 5 minutes   |
| Dryer              | Display shows "ESA/ON" with dew point level shown on bar scale.<br>Auto drain operates 5 seconds every minute<br>Heat exchanger fan should operate with compressor |

## Regulators

|                        | PSI Range  |
|------------------------|------------|
| Thickener feed pump    | 40 psi max |
| Filter press feed pump | 90 psi max |
| Floc feed pump         | 40 psi     |
| Filter press hyd pump  |            |
| Blowdown               | 90 psi max |

## Notes:

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# Fort Edward Landfill - Weekly Operation and Maintenance Checklist

Staff: FZ & AT

Date: 3/23/20

Time: 7:00

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

## HMI SCREENS

| Extraction Wells                                  | Online (Y/N) | Auto | Manual | Flow (gpm) | Level (ft) | (psi) |       |
|---|--------------|------|--------|------------|------------|-------|-------|
| Pump Status/Flow                                  | EW-1         | Y    | ✓      | N          | 0.0        | 13.94 | 0.0   |
| Run pumps in "Manual" to confirm flow, if needed. | EW-2         | Y    | ✓      | N          | 0.0        | 9.91  | 0.0   |
| Confirm pumps are operating between setpoints     | EW-3         | N    | ✗      | N          | 0.0        | 14.95 | NA    |
| Confirm pressure with pump cycling & not high/low | EW-4         | Y    | ✓      | N          | 18.91      | 8.44  | 32.89 |
| If pumps on, is water flowing into IPC (Y/N)?     | EW-5         | Y    | ✓      | N          | NA         | 6.57  | NA    |

### Process - (Check if OK or fill in values)

|   |    |              |    |            |                                |   |
|---|----|--------------|----|------------|--------------------------------|---|
| Chlorine Alarm status (on/off)              | A1 | <u>off</u>   | A2 | <u>off</u> | Auto rotate on/off             | ✓ |
| If on - record chlorine concentration (ppm) |    | <u>-</u>     |    |            | Discharge pump operating       | ✓ |
| Operate exhaust fan manually                |    | ✓            |    |            | Discharge pump pressure normal | ✓ |
| FT-801 reading (GPM)                        |    | <u>18.59</u> |    |            | Building temp accurate         | ✓ |
| Chemical rates normal for flow?             |    | ✓            |    |            | Mixers operating?              | ✓ |
| Catch tank display level=actual?            |    | ✓            |    |            | Other Alarms (Y/N)             | N |

### Filtration (Check if OK)

|                                  |   |                                       |  |
|----------------------------------|---|---------------------------------------|--|
| Air compressor pressure in range | ✓ | Solenoid status correct for operation |  |
|----------------------------------|---|---------------------------------------|--|

### Data (Check if OK)

|  |   |
|--|---|
| Do Daily & Yesterday Starts make sense | ✓ |
|--|---|

### Alarms

|                                    |          |
|------------------------------------|----------|
| All Alarms Enabled (Y/N)           | <u>Y</u> |
| List any disabled and indicate why |          |

## BUILDING/GROUNDS

### Air Compressor (Check if OK)

|                                  |   |                                  |   |
|----------------------------------|---|----------------------------------|---|
| Cycle times normal for load      | ✓ | Check auto drain operation       | ✓ |
| Check oil level at least monthly | ✓ | Check dryer - alarms? Cycling?   | ✓ |
| Belt tension                     | ✓ | HX fan operates with compressor? | ✓ |

### Unit Heaters (Check if OK)

|                                     |   |                                     |            |
|-------------------------------------|---|-------------------------------------|------------|
| Thermostats set correctly (50-55 F) | ✓ | Propane tank level greater than 20% | <u>78%</u> |
| Heaters working                     | ✓ |                                     |            |

### IPC (Y/N)

|                                  |          |                                   |  |
|----------------------------------|----------|-----------------------------------|--|
| IPC discharge clear?             | ✓        | Check sludge ports (Sludge Y/N)   | <u>Y</u>   |
| Floatables? (take photos if yes) | <u>N</u> | Indicate % of sludge at each port | Upper <u>0%</u><br>Mid <u>50%</u><br>Lower <u>100%</u> |
| Coag visibly dosing?             | Y        |                                   |  |
| Floc visibly dosing?             | Y        |                                   |  |

### Chemical Feed (Fill in values)

|                              |              |               |             |             |                   |  |
|------------------------------|--------------|---------------|-------------|-------------|-------------------|--|
| 305 Bleach                   | Height (in)  | <u>22 3/4</u> | mA Signal   | <u>5.7</u>  | Notes             |  |
| 2130 Coagulant               | Height (in)  | <u>3 3/8</u>  | Stroke Rate | <u>11.3</u> | Notes             |  |
| 1668 Flocculant              | Volume (gal) | <u>380</u>    | Stroke Rate | <u>46</u>   | Notes             |  |
| Dosing pumps at normal rate? | ✓            |               |             |             | Chemicals needed? |  |

### Floor Sumps (Y/N)

|  |   |                                  |   |
|--|---|----------------------------------|---|
| Sump levels normal?                      | ✓ | Pump runs but not emptying sump? | ✓ |
| High-High level switches operate freely? | ✓ | Back flowing after pump cycle?   | ✓ |
| Excessive sludge/sediment?               | ✓ |                                  |   |

### Diaphragm pumps (Check if OK)

|                             | Thick Feed | Press Feed | Floc Feed |
|-----------------------------|------------|------------|-----------|
| Proper operation/flow       | ✓          | ✓          | ✓         |
| Regulators working properly | ✓          | ✓          | ✓         |
| Exhaust mufflers            | ✓          | ✓          | ✓         |

### Filter Press (Check if OK)

|                                  |   |   |          |
|----------------------------------|---|---|----------|
| Hydraulic ram operating normally | ✓ | Sorbent pads replaced?                    | <u>N</u> |
| Hydraulic pressure normal        | ✓ | How many total filled Haz drums onsite?   | <u>1</u> |
| Significant leaks?               | ✓ | How many Haz drums filled & closed today? | <u>6</u> |

### General/Housekeeping

|  |          |                     |   |                     |          |
|--|----------|---------------------|---|---------------------|----------|
| Wipe down dirty equipment/piping       | ✓        | Any leaks?          | ✓ | Waste drums needed? | <u>N</u> |
| Sweep and/or wash floors               | ✓        | Lights working?     | ✓ | Drum labels needed? | <u>N</u> |
| Fire extinguisher inspection (monthly) | ✓        | Exit signs working? | ✓ | Removed trash?      | <u>N</u> |
| Sludge in Clarifier Catch Tank?        | <u>N</u> |                     |   |                     |          |

### Grounds

|   |  |
|---|--|
| Mow/trim around building, structures, wells, bollards, control panels and cleanouts | Clear woody vegetation from swales and cap |
| Shovel doorways, apply ice melt   | Look for damage fencing/gates              |
| Confirm gates and doorways locked   | Confirm storage container locked           |



| Extraction Well             | Flow (gpm) | Pressure (psi) | Low-Low | Level (off) | Level (on) | High-High |
|-----------------------------|------------|----------------|---------|-------------|------------|-----------|
| EW-1                        | 20         | 4.5            | 2       | 3           | 10         | 20        |
| EW-2                        | 14         | 11             | 1       | 3           | 10         | 25        |
| EW-3                        | 20         | NA             | 1       | 3           | 10         | 20        |
| EW-4                        | 30         | 20             | 0       | 7           | 10         | 36        |
| EW-5                        | NA         | NA             | 1       | 3           | 10         | 20        |
| <b>Clarifier Catch Tank</b> |            |                | Low-Low | Level (off) | Level (on) | High-High |
|                             |            |                | 0.5     | 1           | 2          | 3.25      |

**Chlorine Alarm**

A1 means chlorine concentration greater than 0.5 ppm

A1 and A2 means concentration greater than 1.0 ppm

If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light .

| Chemical Dosing Rates | HMI Setpoint | Stroke SP | Hand SP  | Pump Screen |
|-----------------------|--------------|-----------|----------|-------------|
| 305 Bleach            | 0.10%        | 100       | 0.16 gph | 5.4 - 6.5   |
| 2130 Coagulant        | 0.10%        | 96        | 0.16 gph | 12.5 - 12.7 |
| 1668 Flocculant       | 0.20%        | 100       | 2.47 gph | 72 - 75     |

**Discharge Pumps**

Typical speed 30-100%  
Typical pressure 22 psi @ 100%

**Air compressor**

operating range 90-175 psi  
regulator setpoint 90 psi  
Auto drain On 5 seconds every 5 minutes  
Dryer Display shows "ESA/ON" with dew point level shown on bar scale.  
Auto drain operates 5 seconds every minute  
Heat exchanger fan should operate with compressor

**Regulators**

Thickener feed pump 40 psi max  
Filter press feed pump 90 psi max  
Floc feed pump 40 psi  
Filter press hyd pump  
Blowdown 90 psi max

**Notes:**

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# Fort Edward Landfill - Weekly Operation and Maintenance Checklist

Staff: MMR & AT

Date: 2/30/20

Time: 0900

Check status and compare to normal conditions. See Reverse side for typical operating parameters.

## HMI SCREENS

### Extraction Wells

Pump Status/Flow  
Run pumps in "Manual" to confirm flow, if needed.  
Confirm pumps are operating between setpoints  
Confirm pressure with pump cycling & not high/low  
If pumps on, is water flowing into IPC (Y/N)? Yes

|      | Online (Y/N)   | Auto       | Manual    | Flow (gpm)   | Level (ft)   | (psi)       |
|------|----------------|------------|-----------|--------------|--------------|-------------|
| EW-1 | <u>offline</u> | <u>NO</u>  | <u>NO</u> | <u>0</u>     | <u>14.06</u> | <u>2.43</u> |
| EW-2 | <u>yes</u>     | <u>yes</u> | <u>NO</u> | <u>0</u>     | <u>7.59</u>  | <u>1.80</u> |
| EW-3 | <u>offline</u> | <u>NO</u>  | <u>NO</u> | <u>0</u>     | <u>14.97</u> | <u>NA</u>   |
| EW-4 | <u>yes</u>     | <u>yes</u> | <u>NO</u> | <u>18.15</u> | <u>16.77</u> | <u>33.7</u> |
| EW-5 | <u>yes</u>     | <u>yes</u> | <u>NO</u> | <u>NA</u>    | <u>10.59</u> | <u>NA</u>   |

### Process - (Check if OK or fill in values)

Chlorine Alarm status (on/off) A1 off A2 off  
If on - record chlorine concentration (ppm) ---  
Operate exhaust fan manually yes ✓  
FT-801 reading (GPM) 18.3  
Chemical rates normal for flow? yes  
Catch tank display level=actual? yes

Auto rotate on/off yes  
Discharge pump operating yes  
Discharge pump pressure normal yes - 2 PSI  
Building temp accurate yes  
Mixers operating? yes  
Other Alarms (Y/N) N

### Filtration (Check if OK)

Air compressor pressure in range yes

Solenoid status correct for operation yes

### Data (Check if OK)

Do Daily & Yesterday Starts make sense yes

### Alarms

All Alarms Enabled (Y/N) yes

List any disabled and indicate why None

## BUILDING/GROUNDS

### Air Compressor (Check if OK)

Cycle times normal for load yes  
Check oil level at least monthly ✓  
Belt tension ✓

Check auto drain operation OK  
Check dryer - alarms? Cycling? no/yes  
HX fan operates with compressor? yes

### Unit Heaters (Check if OK)

Thermostats set correctly (50-55 F) ✓  
Heaters working Y

Propane tank level greater than 20% yes, 35%

### IPC (Y/N)

IPC discharge clear? Y  
Floatables? (take photos if yes) Y/N  
Coag visibly dosing? Y  
Floc visibly dosing? Y

Check sludge ports (Sludge Y/N) \_\_\_\_\_  
Indicate % of sludge Upper \_\_\_\_\_  
at each port Mid \_\_\_\_\_  
Lower \_\_\_\_\_

### Chemical Feed (Fill in values)

305 Bleach Height (in) 24.5" mA Signal 5.6  
2130 Coagulant Height (in) 27.75" Stroke Rate 11.3  
1668 Flocculant Volume (gal) 400 Stroke Rate 6.6

Notes \_\_\_\_\_  
Notes \_\_\_\_\_  
Notes Made 125 gallons of Floc.  
Chemicals needed? \_\_\_\_\_

Dosing pumps at normal rate? Y

### Floor Sumps (Y/N)

Sump levels normal? Y  
High-High level switches operate freely? Y (check monthly)  
Excessive sludge/sediment? no

Pump runs but not emptying sump? NO  
Back flowing after pump cycle? NO

### Diaphragm pumps (Check if OK)

|                             | Thick Feed | Press Feed | Floc Feed |
|-----------------------------|------------|------------|-----------|
| Proper operation/flow       | <u>yes</u> | <u>Y</u>   | <u>Y</u>  |
| Regulators working properly | <u>Y</u>   | <u>Y</u>   | <u>Y</u>  |
| Exhaust mufflers            | <u>OK</u>  | <u>OK</u>  | <u>OK</u> |

### Filter Press (Check if OK)

Hydraulic ram operating normally Y  
Hydraulic pressure normal Y  
Significant leaks? N

Sorbent pads replaced? N  
How many total filled Haz drums onsite? 7  
How many Haz drums filled & closed today? 1

### General/Housekeeping

Wipe down dirty equipment/piping Y  
Sweep and/or wash floors Y  
Fire extinguisher inspection (monthly) Y  
Sludge in Clarifier Catch Tank? N

Any leaks? N  
Lights working? Y  
Exit signs working? Y

Waste drums needed? Y  
Drum labels needed? Y  
Removed trash? N

### Grounds

Mow/trim around building, structures, wells, bollards, control panels and cleanouts  
Shovel doorways, apply ice melt  
Confirm gates and doorways locked

Clear woody vegetation from swales and cap  
Look for damage fencing/gates  
Confirm storage container locked

# Fort Edward Landfill - Typical Operating Parameters

| Extraction Well             | Flow (gpm) | Pressure (psi) | Low-Low        | Level (off)      | Level (on)      | High-High         |
|-----------------------------|------------|----------------|----------------|------------------|-----------------|-------------------|
| EW-1                        | 20         | 4.5            | 2              | 3                | 10              | 20                |
| EW-2                        | 14         | 11             | 1              | 3                | 10              | 25                |
| EW-3                        | 20         | NA             | 1              | 3                | 10              | 20                |
| EW-4                        | 30         | 20             | 0              | 7                | 10              | 36                |
| EW-5                        | NA         | NA             | 1              | 3                | 10              | 20                |
| <b>Clarifier Catch Tank</b> |            |                | Low-Low<br>0.5 | Level (off)<br>1 | Level (on)<br>2 | High-High<br>3.25 |

## Chlorine Alarm

A1 means chlorine concentration greater than 0.5 ppm

A1 and A2 means concentration greater than 1.0 ppm

If both on, the following will occur: Stop bleach pump, open intake louver, turn on exhaust fan and outside warning light.

| Chemical Dosing Rates | HMI Setpoint | Stroke SP | Hand SP  | Pump Screen |
|-----------------------|--------------|-----------|----------|-------------|
| 305 Bleach            | 0.10%        | 100       | 0.16 gph | 5.4 - 6.5   |
| 2130 Coagulant        | 0.10%        | 96        | 0.16 gph | 12.5 - 12.7 |
| 1668 Flocculant       | 0.20%        | 100       | 2.47 gph | 72 - 75     |

## Discharge Pumps

Typical speed 30-100%  
Typical pressure 22 psi @ 100%

## Air compressor

operating range 90-175 psi  
regulator setpoint 90 psi  
Auto drain On 5 seconds every 5 minutes  
Dryer Display shows "ESA/ON" with dew point level shown on bar scale.  
Auto drain operates 5 seconds every minute  
Heat exchanger fan should operate with compressor

## Regulators

PSI Range  
Thickener feed pump 40 psi max  
Filter press feed pump 90 psi max  
Floc feed pump 40 psi  
Filter press hyd pump  
Blowdown 90 psi max

## Notes:

On arrival, system down. Flash chamber Mixer M1 Failure. System potentially down due to thunder storms in area on 3/29.  
Sampled Influent, COT, Cell 3 bypass, Cell 2 Effluent, Blishing Pond Effluent.

(6) Drums sludge waste - (2) 2/25/20 (1) 3/3/20 (1) 3/10/20 (1) 3/16/20 & (1) 3/30/20

(1) Drum sludge waste - 3/23/20 (2) 12/6/19 Drill cuttings

Aries 305 (1/2) Drum In use (2) Full spare

Aries 2130 (3/4) Drum In use (1) spare 1/4 Full? Don't know why. Label NIG?

Aries 1668 Floc - 1/2 Bag Remaining in use  
2 Bags Full