



OCTOBER 18TH, 2021

**SCHNEIDER SPRINGS FIRE  
SEPTEMBER 2021**

# INCIDENT REPORT

# Human Eco Consulting

SCHNEIDER SPRINGS SEPTEMBER 2021

# INCIDENT WASTE MANAGEMENT



## OVERVIEW OF INCIDENT

**T**he Schneider Springs Fire started on August 4th, approximately 20 miles northwest of Naches, WA, due to a lightning storm covering the Northern Cascade Mountain Range. Human Eco Recycling was dispatched on September 14th, arriving on-site in the late afternoon. Management of the fire fell under Okanogan-Wenatchee National Forest and the Washington Department of Natural Resources. During Human Eco's tenure, Schneider Springs was managed by NW IMT 10, and the Incident Commander was Alan Lawson. On September 28th, Human Eco demobilized and returned to Bellingham. The personnel count fluctuated between 400 - 600.

## DIVERSION SUMMARY

Using estimated and actual values, Human Eco calculated waste diversion rates. Human Eco staff kept a daily collection log for actual and estimated recycling weights, found in Appendix 2. Our team sorted all recyclable material generated from the waste stations and the waste received from firefighters for contamination. Clean streams were weighed and recorded for diversion. Cardboard weights captured by Michelsen Packaging Company are in Appendix 3. The trash weight recorded in Survey123 came from the tipping weights from Yakima Waste Services, and estimates of volume from daily dumpster photos later converted to weight.

Human Eco evaluated local infrastructure in the Greater Yakima region to determine locally acceptable recyclable material from the incident. At base camp, waste stations providing recycling options were placed throughout the camp to encourage proper material sorting. In addition, Human Eco staff operates a strategically placed recycle center to showcase materials recovered and offer educational opportunities to the

firefighters and camp personnel. Finally, Human Eco established a Blue Bag recycling program, allowing firefighters to separate waste in the field and return it to the recycle center at the end of their shift.

Human Eco achieved an **average diversion rate of 31%** on the Schneider Springs Fire, **diverting close to 17,000 lbs** of material in 14 days!

| Material  | Total Pounds Recycled |
|---|-----------------------|
| Plastic (PET & HDPE)  | 872                   |
| Aluminum and Tin  | 297                   |
| Glass   | 151                   |
| Office Paper and Lunch Bags   | 1,085                 |
| Cardboard   | 6,560                 |
| Food Donation   | 1,298                 |
| Batteries   | 2,110                 |
| Cooking Oil   | 494                   |
| Compost ( Pig Program )   | 2,675                 |
| Mixed (scrap metal, tires, pallets, camping equipment, hoses, etc.) | 1,515                 |
| <b>TOTAL MATERIAL DIVERTED</b>                                      | <b>17,057 LBS</b>     |

## EDUCATION / OUTREACH / OBSERVATIONS

The Human Eco approach is education forward. We believe that change can spark when people feel informed and empowered to participate. Therefore, we make it a top priority to be seen and approachable while on an incident. In addition to maintaining this personable presence, Human Eco is strategic in our interactions with the fire community. For example, the Schneider Springs Fire strategies focused on waste station placement, communications, and waste convenience offerings.



Upon arrival at the incident base camp, we contacted the facilities leaders and outlined our planned approach for camp waste set-up. We collaborated with the lead to select a



Recycle Center

location for our recycling station that worked for all parties. We chose a highly-trafficked thoroughway between the majority of the camp and the catering area. This increased visibility which encouraged personnel to stop by, ask questions, and express curiosity about the operation and its goals. In addition, it provided Human Eco with consistent touch-points with our participants, allowing us to dispel any confusion or misunderstandings about recycling. The recycling center is made up of material-specific bins for collecting single-stream recyclable material. The bins were set before a

sorting line for Human Eco staff to sort materials into various containers. Specialty recycling, such as batteries, food donations, and other recyclable materials, were collected and stored until we reallocated these items to different community organizations in the area. Throughout the incident base camp and ICP, the placement of centralized waste stations presented a uniform approach to recycling. Each station was labeled with both imagery and words, describing what material should go in which bin.

The second strategy for increasing personnel participation utilized previously established communication avenues. Using the IAP and morning briefings, we let people know that recycling was available. We gave them tangible ways to participate and communicated clear and concise instructions on recycling at the incident.

Lastly, as a part of a well-managed recycling program, we believe that convenience is vital. Our goal is to make access to recycling easy to understand and consistent. This year, in compliance with the BPA, we provided separate Blue Bags with a recycle symbol for firefighting personnel to use in the field. These recycle bags offer the opportunity for

personnel to separate waste during the day. In these bags, we accepted the following items for recycling: bottles, cans, coffee cups, glass, paper, and batteries. We found that distributing these bags in person at the refer, between 0630 and 0800, drove the use rate up substantially. Additionally, leaving a small collection of these bags at Refer and in front of our recycling center allowed ample opportunity for personnel to take one when needed.



Human Eco toppers & Blue Bag Program

## COST & BENEFITS OF RECYCLING

Waste removal on significant incidents can be extremely costly. For example, dumpsters are often placed on a reoccurring schedule for pick up, regardless of how full they are. As a result, dumpsters are frequently hauled empty or near-empty containers and charged as though full.

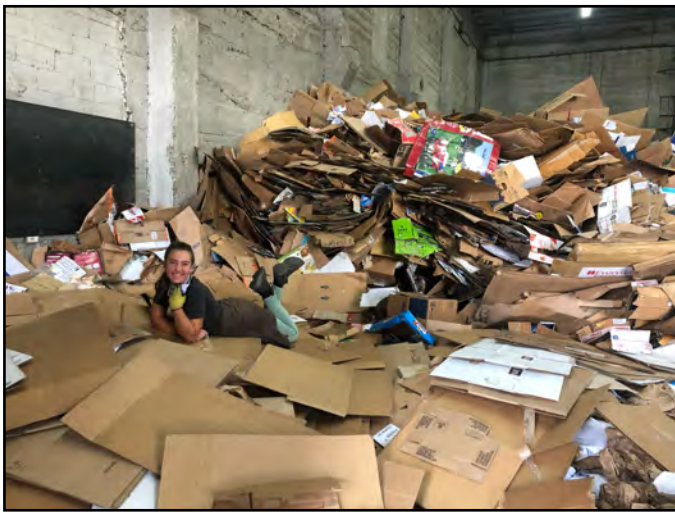
Our job on incidents is to oversee the levels of waste generation in the roll-off containers and notify and advise facilities when they must haul. Our goal in roll-off management is to reduce the number of unnecessary pickups, maximize the fullness levels of the containers, and decrease the number of dumpsters present on the incident. Thus dual benefits of cost savings implications and carbon reduction impact from less freight travel of waste removal.

We found opportunities to prove our value upon arrival on Schneider Springs Fire by collaborating with facilities concerning significant dumpster changes. As our first act, **we reduced the number of dumpsters on-site from five to four**. We then advised the placement of dumpsters and changed the size of one of the dumpsters from a 40 yd to a 30 yd dumpster to assure a monitored rate of volume gain.

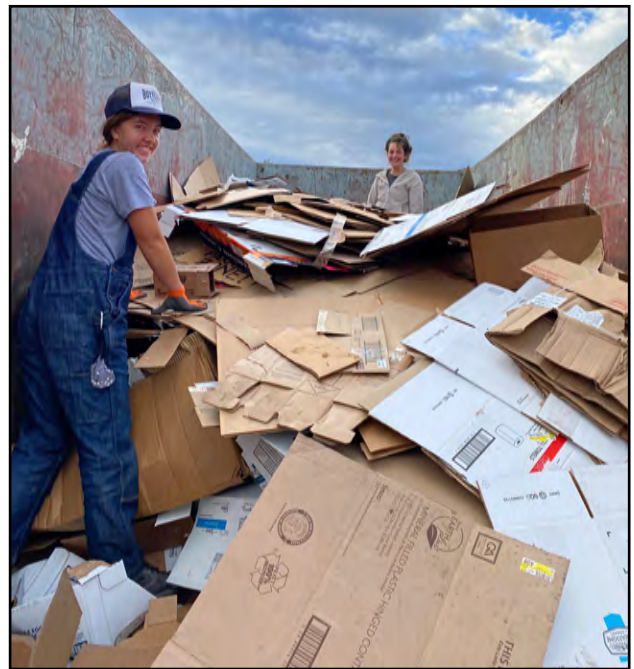
Second, we established one dumpster as a "cardboard only dumpster" in the catering area. We chose to prioritize this change because catering is typically the largest

generator of cardboard at camp. Therefore, keeping an accessible cardboard dumpster behind catering made separating cardboard from other waste items easy.

Finally, we kept a dumpster placed in a strategically remote location as a safeguard against overflow. We advised facilities that this fourth dumpster would prove redundant, but engrained wariness against potentially unsanitary conditions overruled our advice. As it stood, our waste reduction rate made it possible that this dumpster was only serviced once during our participation. After these changes, there were only three landfill dumpsters and one dumpster dedicated to recyclable cardboard.



(A) Human Eco staff at Michelsen Packaging  
(R) Staff managing Cardboard-only  
dumpster



## PARTNERSHIP WITH MICHELSEN PACKAGING

We were lucky enough to work with Michelsen Packaging Company. This Yakima-based company creates and distributes packing supplies for the fruit tree industry, including fruit trays. They are an integral part of the local fruit harvesting economy, helping farmers protect their wares en route to market. To create fruit trays, Michelsen Packaging uses paper products to make a pulp. This unique recycling process made it possible for Human Eco to recycle coffee cups. This waste material is always present at all wildland fire camps, although generally not recyclable. Thus, Michelsen Packaging became our designated recycler for paper-based products, from office paper to cardboard to coffee



cups. In addition, we coordinated with the facilities team, catering, and Yakima Waste Services, to allocate one of the existing dumpsters as a designated cardboard-only dumpster. Ultimately, to avoid cardboard contamination by other waste, we thoroughly inspected it daily. With this addition to the camp infrastructure, we recycled an average of **469 lbs of cardboard a day**.

## PARTNERSHIP WITH LOCAL PIG FARMERS



(L) pigs are fed food out of five-gallon buckets from catering (R) pig farmers stand next to their truck loaded with food for their pigs.



Human Eco and Incident Catering Services worked together on this incident to develop and carry out a composting program for excess food prepared by catering. To make this possible, kitchen staff loaded extra food into five-gallon buckets supplied by Incident Catering Services. They set these buckets on pallets for local pig farmers to pick up. Human Eco supplemented the buckets with fruit that was too damaged to donate to a food bank, as well as uneaten vegetables and sandwiches from lunches. With permission to enter the camp from Security, the farmers came by every other day to pick up between six and eighteen buckets of food. After giving the food to their pigs, they would return the empty buckets to the pick-up location and trade them in for newly loaded food

buckets. The compostable food remained fresh and odorless with this daily pick-up routine, ensuring that it would not attract animals or pests.

Initially, we could only find one pig farm, Douglas Farms, to participate in the composting program. After connecting with this farmer through a web search of local pig farms, we made a plan for food exchange based on mutual flexibility and continued communication. Our priority was to keep food waste out of the landfill and help local farmers feed their pigs in a way that was beneficial to them. For example, Douglas Farms emphasized the importance of a balanced diet for their pigs. After a successful trial run, they decided to continue receiving food from us. However, we quickly realized that the extra food from catering was an excessive quantity for one farm (twenty pigs). Because of this, some food went to the landfill. This reality prompted us to continue our search to find more pig farmers

The next step we took in this process was to ask the owner of a food bank if they knew any pig farmers who might want to participate in our composting program. Selah Food Bank, where we donated food from the incident, graciously connected us with an interested farmer who became the second participating farm in our program. We then rotated farmers through, enabling us to divert most of the excess food from landfill. We learned that food banks often have a connection with pig farmers to donate food that is not suitable to give out to the community through their operations. We plan to combine a web search with local outreach at food banks to find more pig farmers moving forward. For a composting program to divert more food consistently, it is critical to have multiple farmers participating due to the high volume of leftover/uneaten food.

## **LESSONS LEARNED AND RECOMMENDATIONS**

Waste generation during COVID increased significantly due to the single-use packaging required for food service. Meals were served both individually and in bulk for crew pickups. Individual meals were prepared in advance with all meal accompaniments regardless of personal preference and bagged for transport in bio-degradable bags. Individuals had some choice in add-ons to meals, such as extra dessert or salad dressing. Conversely, for bulk meals for crews, all food was in large boxes with all possible additions to meals with no option to refuse anything. As a result, large portions of meals



ended up in the trash stream. Additionally, clamshells retain their structure in the waste stream, so a considerable volume of dumpsters was the void space of meal containers.

Another challenge of this incident was the odor. Unfortunately, due to some personnel injuries, the team could not clear all trash bags from the recycle center for a few days. Due to the proximity to town and access to restaurant food, odiferous food items made up a high percentage of the trash brought to the recycling center. As final conjunction, temperatures increased to the 90's during that weekend. As a result, the recycle center gained an unfortunate aroma for the final evening of the weekend. On Monday, back to fully staffed and freshly hauled dumpsters, our area returned to its usual controlled environment.



Clamshells add significant volume to waste generation on a daily basis.

## RECOMMENDATIONS

- The contracting officer should forward information about the recycling service and its goals to the logistics lead of the incident. The logistics lead can then share this information with the incident at large to understand what to expect from the recycling service.
- IAP inserts for recycling daily, starting with an introductory page with information on how-to-recycle at camp. Later include best practices tips and updates recycling diversion from the landfill.
- Human Eco team members allowed an informational segment in the morning briefings. If timing limits team participation, the logistics chief speaks on behalf of the team to add credibility.

- Cardboard recycling dumpster increases recycling efficiency. Additionally, Human Eco should have permission for how to obtain and schedule recycling dumpsters if appropriate.
- No single-use clamshells for *cold* food coming from the catering line. Food items like yogurt, waffle packs, or other pre-packaged goods need no additional packaging and should be dispensed only upon request.
- Trash should not be a convenience. We need to make the dumpster access more difficult and limited.
- In order to maintain sanitation practices, the sort operation should be fully cleared daily. If this is cannot be met, the team should reorganize waste bags to ensure new material does not bury existing waste.

# APPENDIX

## APPENDIX 1 // SERVICE LOCATIONS & RECYCLING

| Location                    | Facility Name | Dumpster Count Size                      | Personnel Ct. |
|-----------------------------|---------------|--|---------------|
| Schneider Springs Base Camp | Base camp     | (3) 40 yd containers (1) 30 yd container | 400-600       |

| Name  | Commodity                                    | Location       | Receipts (Y/N)       |
|---|--|----------------|----------------------|
| Central Washington Recycling (run by Michelsen Packaging) | Cardboard, mixed paper, coffee cups          | Yakima, WA     | Y - proof of payment |
| DTG   | Plastic #1, HDPE, aluminum, tin, scrap metal | Yakima, WA     | N - drop off only    |
| Highland Food Bank  | Food Donation                                | Tieton, WA     | N - drop off only    |
| Selah Food Bank   | Food donation                                | Selah, WA      | N - drop off only    |
| Douglas Farms   | Compost for pigs                             | Selah, WA      | N - drop off only    |
| Four Bar Ranch  | Compost for pigs                             | Selah, WA      | N - drop off only    |
| Camp Hope   | Camping gear, food                           | Yakima, WA     | N - drop off only    |
| Terrace Heights Landfill                                  | Batteries                                    | Yakima, WA     | Y - proof of payment |
| Upper Valley Tire Center                                  | Tires  | Tieton, WA     | N - drop off only    |
| A-1 Pallets, Inc.   | Pallets                                      | Yakima, WA     | Y - proof of payment |
| Miles Farmer from Aries Logistics                         | Used fire hose                               | Yakima, WA     | N - drop off only    |
| Recycling & Disposal Services Inc                         | Glass  | Bellingham, WA | Y - weight ticket    |



| Date | Personnel # | Location | Plastic #1<br>Bottles (yd) | Plastic #1<br>and #2<br>Bottles (lbs) | Plastic #2<br>(yd) | Plastic #2 (lbs) | OCC (yd) | OCC (lbs) | Aluminum/<br>Tin (yd) | Aluminum/<br>Tin (lbs) | Glass (yd) | Glass (lbs) | White<br>Paper |
|------|-------------|----------|----------------------------|---------------------------------------|--------------------|------------------|----------|-----------|-----------------------|------------------------|------------|-------------|----------------|
|------|-------------|----------|----------------------------|---------------------------------------|--------------------|------------------|----------|-----------|-----------------------|------------------------|------------|-------------|----------------|

| Week 2      |         |          |                 |                 |                       |                   |                  |                    |                     |               |              |               |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      |                       |
|-------------|---------|----------|-----------------|-----------------|-----------------------|-------------------|------------------|--------------------|---------------------|---------------|--------------|---------------|---------------|---------------|--------------------|-------------|------------|------------------|-------------|---------------------------|---------------|---------------|---------------|---------------|--------------------------------|------------|-------------|----------------------|-----------------------|
| City        | Date    | Location | Batteries (vlt) | Batteries (lbs) | Cooking Oil (gallons) | Cooking Oil (lbs) | Molten oil (lbs) | Food Donation (yd) | Food Donation (lbs) | Actual Weight | Compost (yd) | Compost (lbs) | Pallets Count | Pallets (lbs) | Pallets (Estimate) | Tires Count | Tires (yd) | Tires (Estimate) | Tires (lbs) | Tires (lbs) Actual Weight | E-Waste (vlt) | E-Waste (lbs) | Actual Weight | W-Waste (lbs) | Camping equipment, tools, etc. | Used Hoses | Scrap metal | DAILY TOTAL RYC (YD) | DAILY TOTAL RYC (LBS) |
| Chattanooga | 9/20/21 |          | Estimate        | Actual Weight   |                       |                   |                  | Estimate           |                     |               |              |               |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      |                       |
| Tuesday     | 9/21/21 |          |                 |                 |                       |                   |                  |                    |                     |               |              |               |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      | 0                     |
| Wednesday   | 9/22/21 |          |                 |                 |                       |                   |                  |                    | 312.1               |               |              | 1,039         |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      | 1,851.1               |
| Thursday    | 9/23/21 |          |                 |                 |                       |                   |                  |                    |                     |               |              |               |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      | 0                     |
| Friday      | 9/24/21 |          |                 |                 |                       |                   |                  |                    |                     |               |              |               |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      | 0                     |
| Saturday    | 9/25/21 |          |                 |                 |                       |                   |                  |                    |                     |               |              |               |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      | 0                     |
| Sunday      | 9/26/21 |          |                 |                 |                       |                   |                  |                    |                     |               |              |               |               |               |                    |             |            |                  |             |                           |               |               |               |               | 107.9                          | 28.7       | 24          |                      | 140.0                 |
| Monday      | 9/27/21 |          |                 | 2110            |                       |                   |                  |                    | 441                 |               |              | 736           | 15            | 600           |                    | 4           |            |                  | 144         |                           |               |               |               |               |                                |            |             |                      | 4031                  |
| Tuesday     | 9/28/21 |          |                 |                 | 65                    |                   |                  |                    | 380.5               |               |              | 558.2         |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                | 630        |             |                      | 1508.7                |
| Wednesday   | 9/29/21 |          |                 |                 |                       |                   |                  |                    | 205                 |               |              | 342           |               |               |                    |             |            |                  |             |                           |               |               |               |               |                                |            |             |                      | 54.7                  |
| TOTAL       |         |          | 0               | 0               | 2110                  | 65                | 0                | 0                  | 1298.6              |               | 0            | 2,675.2       | 15            | 600           |                    | 4           | 0          |                  | 144         |                           | 0             | 0             | 0             | 0             | 107.9                          | 616.7      | 24          | 0                    | 7586.4                |

<https://www.epa.gov/sites/production/files/2016-04/documents/>

## APPENDIX 3 // SUPPORTING DOCUMENTATION



Human Eco staff receives recognition from Incident Commander