Veolia Water Technologies & Solutions Report

Group #7 Members: Ethan Wu, Parker Shanor, Kelcey Howard, Jabir Mohamed

I. Executive Summary

Veolia North America is a subdivision of the Veolia Environmental Corporation dedicated towards providing sustainability management. Our group had the opportunity to work with Veolia Water Technology and Solutions to redesign a process within one of the Plant Facilities located in Fontana, California. The Plant Manager, Javier, gave us the privilege to redesign one of their current processes, how his Operators took reports to process incoming deliveries. Our group was given the task of shifting the way the Operators took reports involving paper, to create a new, current process that is fully technology based. The goal of this project was to eliminate the need for limited resources, such as paper, to further align with the company's set sustainability principles. The redesign also aims to shorten the amount of time operators spend on each delivery with a goal of five minutes, by removing the need for operators to audit information both into reports and through their current system, Movilizer. Upon discussions with Javier on the constraints and expectations of the revised process, we decided to create an easy to learn application meant for delivery reports designed through AppSheet, a Google application development platform. We broke up the paper report into sections when creating the app database and compatible interface. We used CData, a data integration subscription software to connect our app database to Veolia's SAP Database. The costs of implementing this solution would require an upfront one-time cost of $1,500 for iPad hardware to download the app, with an additional recurring cost of CData integration subscription. With our solution we were able to drastically cut the Fontana facility's office supplies expenses to $21.50, by taking out paper used in the report process. The recurring cost comparisons between CData and Movilizer are expected to be the same, meaning Veolia won't be paying more. We estimate we were able to save operators at least ten minutes spent on each report by removing the need for operators to double audit information. While we calculated an ROI of only 3.2%, the most important consideration in this process by our client was prioritizing Veolia's environment sustainability principles. Our team worked with diligence alongside Javier to cultivate an app that effectively fulfills the Plant Facility's needs.

II. Writing Quality

A. Meaning

i. Clarity

15:Report easily understood, compelling, uses active voice throughout

10: Good but too many claims unsupported by concrete evidence

0: Confusing, unconvincing, too much passive voice, wandering

Concise

15: Direct and efficient communication, no verbosity, no “sales copy-speak”, no redundancy

10: Good but could be more concise, too wordy in too many places.

0: Too many words when fewer would work better, too much ambiguity, too much “sales copy-speak”

B. Structure and Design

i. Overall flow of the paper with…

5 Good use of transitions

5 Good use of section headings

ii. Logically coherent

10: Solutions and Conclusions make sense with a “real world” lens

5: Solutions and conclusions did not match up with stated problems

0: Solutions and Conclusions were confusing with a “real world lens”

iii. Well structured

10: Problems, solutions, and justifications are clearly connected

0: Problems, solutions, and justifications are not connected

i.MIS 306 Word / Concept Usage

15: appropriate amount of MIS 306 terms/concepts, used properly

0: insufficient amount of MIS 306 terms/concepts, or used improperly

ii. Grammar

15: followed English grammar rules

10: generally good, but awkward sentence structure in too many places

0: poor, erratic, inconsistent grammar

iii. Typos / General Business Word Choice

15: No typos, including no homonyms or misspellings, all words used are appropriate, capitalizations correct

10: Mostly good, but in places weird / wrong word choice, typos,

0: Too many typos, homonyms, misspellings, capitalization problems

III. Business Analysis Section A. Enterprise Analysis

Veolia North America, LLC is a leading sustainability management company founded in 1980 with over 10,000 employees across more than 350 locations in North America with 220,000 worldwide. Stated on their website, Veolia is committed to “contribute to human

progress by firmly committing to the Sustainable Development Goals set by the UN to achieve a better and more sustainable future for all". Ranked as one of the top environmental services companies in the United States, Veolia is concerned with issues involving improving access, preservation, and replenishment of Earth's finite resources. They conduct operations with water, waste, and energy delivering practical, high impact solutions to customers and communities. Veolia engages in a variety of Commercial, Government, and Industrial markets ranging from healthcare to automotive. At the end of the 2023 fiscal year, Veolia generated 5.4 billion in sales with 2.6 times growth between 2019 and 2023. Due to the major success in North America, Veolia has strong ambitions to increase its expansion and environmental impact. Veolia's company growth intentions are to double in size by 2030 and increase its current revenue by 50%. The revenue goals set by Veolia are ambitious due to its recent trends in overall growth. The past fiscal year was an ambition to generate one billion euros of adjusted net income with an annual revenue growth exceeding the metrics reached in 2022 of 42.9 billion euros. In 2023, the entire company exceeded expectations achieving 1,335 million euros with a revenue growth of 45.3 billion. Due to the company's capacity to go beyond metric goals throughout the years, it would be reasonable to infer Veolia as a whole could meet its revenue increase of 50% in six years. In addition to environmental sustainability, Veolia believes in protecting and enhancing biodiversity in the regions it operates. Veolia is passionate about restoring biodiversity by collecting information in these communities and tailoring their action plans that support it. Veolia is concerned with efforts to modernize its operations through digital transformation and have launched a measurable roadmap to completely digitize. They wish to integrate technologies allowing the company to deliver more value to their stakeholders.

One of Veolia's biggest strengths is they are one of the largest sustainability companies in the world boasting a revenue of 45.35 billion euros worldwide in 2023. The company's wide variety of clients necessitating sustainability means they won't have trouble finding service demand. Operations globally across the five continents allows Veolia to offer services where desired. The company's large size doesn't make their operations easy as Veolia's large scope of services involving sustainability in a variety of business sectors makes it difficult to manage each service offered, a weakness to the success of the company. Due to operations globally, Veolia has to create solutions complying with individual regulations in different regions. Veolia's cost and time for service with each client will vary depending on their requirements and self-interests. Fortunately, Veolia's environmental sustainability values means it has the opportunity to partner with clients who have similar interests even if that customer has differing operations. Veolia has the potential to gain endorsements from the government because of their overlapping commitment to carbon neutrality goals. Working in different regions means Veolia is threatened by strict guidelines to follow depending on the country and industry. The

company cannot control the competing industries that care little for environmental hazards such as oil companies, who can compromise the environmental solutions implemented.

Even with their bold ambitions, Veolia is determined to erase 600K tons of CO2 emissions from the atmosphere by continuing to innovate energy efficiency solutions. Concerning water usage, Veolia aims to save 100M cubic meters of water by 2027 by committing to water recycling and distribution leakage reduction. Veolia wants to strengthen waste management by treating 2M tons of hazardous waste through regulations compliance.

Veolia's sub division, Veolia Water Technologies and Solutions, focuses on water treatment and purification. To achieve this goal, Veolia aims to deliver innovative products and processes across the globe and meet business and industry water treatment needs and qualifications with long term sustainable solutions. Veolia Water Technologies and Solutions focuses on contracting with production and treatment plants to oversee their functionality to serve the surrounding communities water needs. Their goals are to provide accessible water to millions of people as possible.Veolia will go out to businesses, regions, and other industries with water treatment plants to test the quality of their client's water to see if it is compliant with regulations and other industry standards using various chemicals, technologies, and other processes. Veolia North America, LLC as a whole focuses on keeping our environment clean and healthy to keep our quality of life at a high standard and improve future sustainability. By treating water and wastewater, Veolia is meeting their mission objectives and allowing the globe to safely reuse and recycle their water.

Prominent issues that arise from poor water quality and waste management are as follows: Acid Rain, Greenhouse Effect, Ozone Depletion, Tropical Deforestation, Urban Trash Crisis, Pesticides in Groundwater, and Natural Carcinogens. With all those problems also comes the issue that clean and fresh water is a finite and valuable resource. Veolia takes the opportunity to look into processes that will improve water quality and limit waste and pollutants from damaging the environment as a whole. Veolia Water Technologies and Solutions goes to their clients, assesses the issue at hand by detecting the change in quality, identifying the cause of the change, and taking action to fix the issue and bringing back operations to their status quo. "We provide clean water, treat wastewater and manage biosolids for nearly 25 million people in communities all over North America. VNA's work keeps pollution out of the environment, protects public health, supports economic development, encourages water reuse and increases resilience." Based on Veolia's website, Water makes the most revenue for the company generating 40.6%. Specifically, Veolia's Water Technology makes up 10.4% of overall

revenue accumulated yearly. At this time, they manage 3,809 drinking water production plants worldwide supplying 113 million people with clean usable water. Veolia's success in the water and waste management industry allowed them to rake in 100 million dollars in revenue in the 2023 fiscal year.

IV. Current Business Process Analysis

Our target process is a delivery order form for the company's trucks and resin level measurements. The purpose of the delivery order is to be sent to Veolia's facility which is then taken by the facility operator to fulfill the request. The operator has to fill out the given report regarding the truck's physical condition and equipment levels before it is sent to a customer's site as well as when the truck comes back from the area of operation. This form is mainly used to measure the truck's external/interior shape, gallonage and resin levels to ensure it is within acceptable parameters. The company uses Movilizer, a cloud-based software platform that manages workflows, to send the information on the form to Veolia's SAP database to turn the given data into an organized and meaningful chart for future reference or water analysis. The SAP database has an additional use to oversee if future work is needed to be performed for the client.

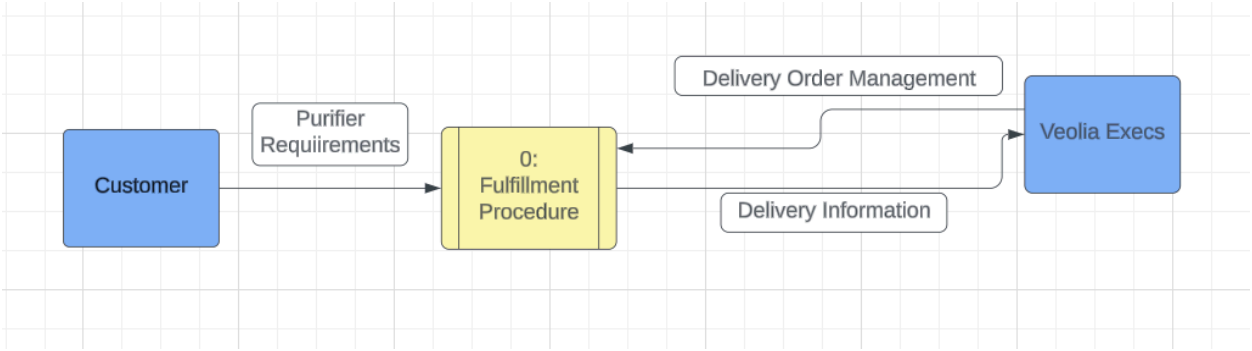
The current Physical System Narrative involves an assigned operator to print out a physical two-page report containing information regarding resin level and current purifier condition. The operator fills out information within this form by analyzing the purifier trailer that is to be sent out. The operator has to report current operation levels of the purifier and ensure they fit within acceptable parameters. Once an operator analyzes and approves the purifier through the form, it is uploaded through Molivizer, a cloud information application, to create a digital PDF copy of the report. Within Molivizer, the operator sends the PDF to SAP software for data storage related to that delivery. Before the operator can send the delivery report, they must fill out additional information related to the purifier in Movilizer enabling SAP to process the entire delivery. Within SAP, any Veolia executive can access records about delivery. When an operator has completed manual entries, the truck is able to be released and the delivery request has been fulfilled.

The main problem now is the company is wasting physical resources and time. Operators are required to fill out a paper form related to a delivery that will be discarded once the truck purifier is sent out. The current process involves operators manually entering information related to the purifier identical to the physical form they fill out. Time spent on a delivery is further wasted by requiring operators to fill out reports physically and electronically. The ideal solution for Veolia would drastically shorten the time it takes for operators to input delivery information while being fully reliant on technology. A possible solution Veolia uses is Molivizer, a cloud computing platform, allowing physical

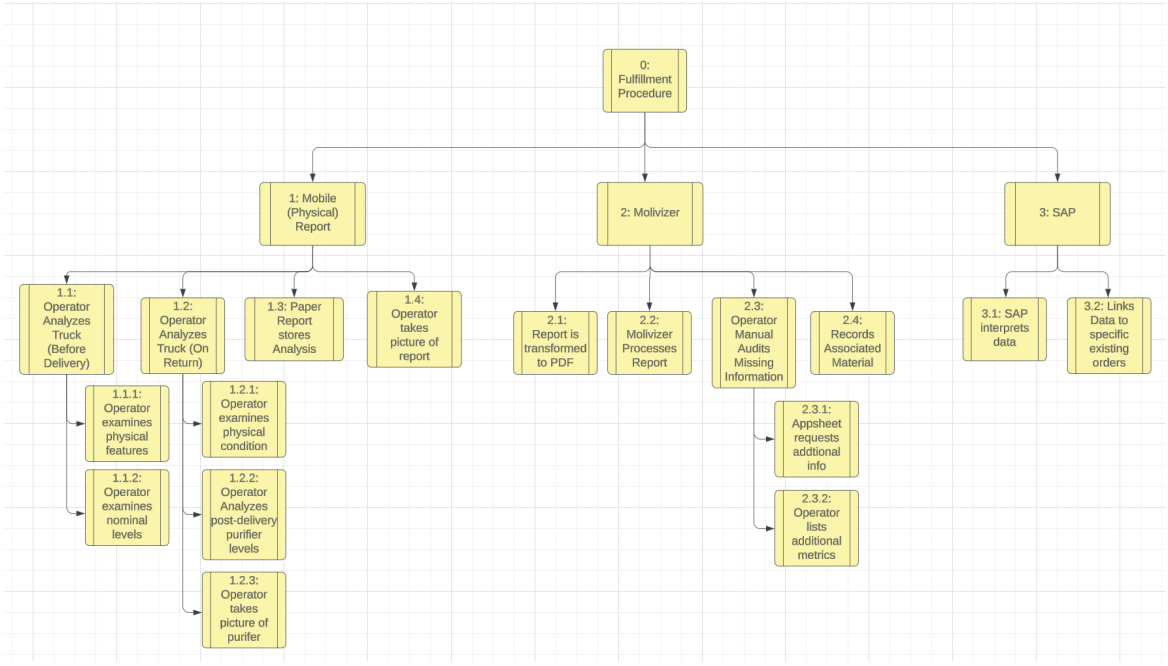
copies of completed reports to be uploaded to SAP. Molivizer is currently underutilized and requires complex training to be a reliable software. A revised process could involve extending usage of Molivizer or finding another application that can consolidate the current process to efficiently meet Veolia's needs.

KPI	Baseline	Target
Training Time	2 months	1 month
Cost for System/Process	Ink/Paper/Movilizer subscription	Electronic Hardware/Server link subscription
Time spent on Delivery	All day process with processing paper and manually inputting data when on site job is completed	Data received when delivery is completed

Context Diagram



Functional Decomposition Diagram



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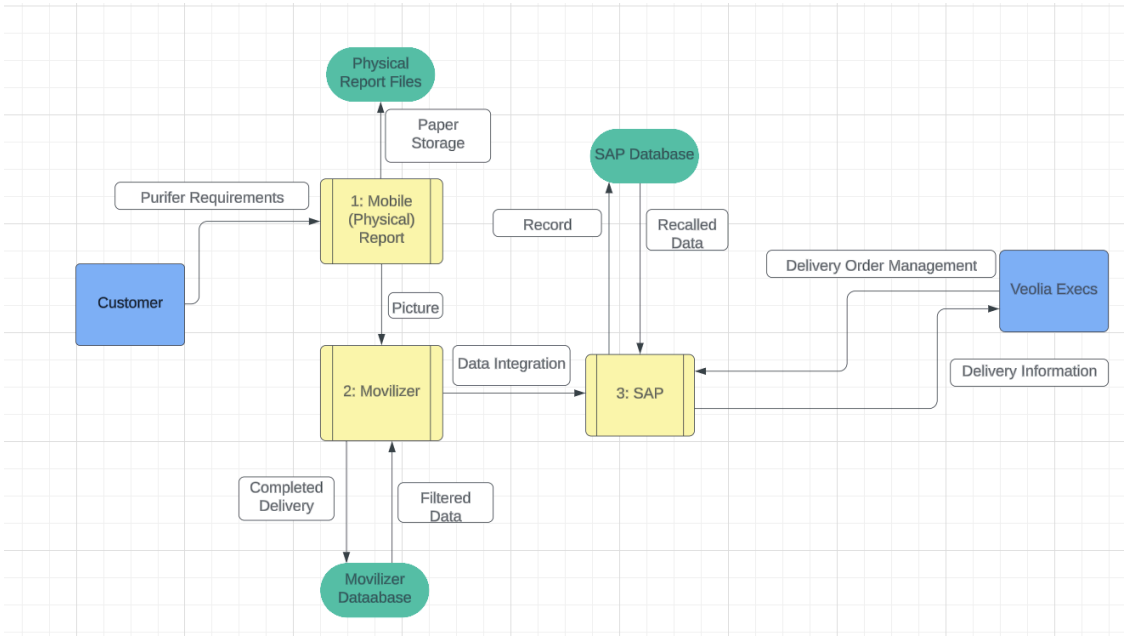

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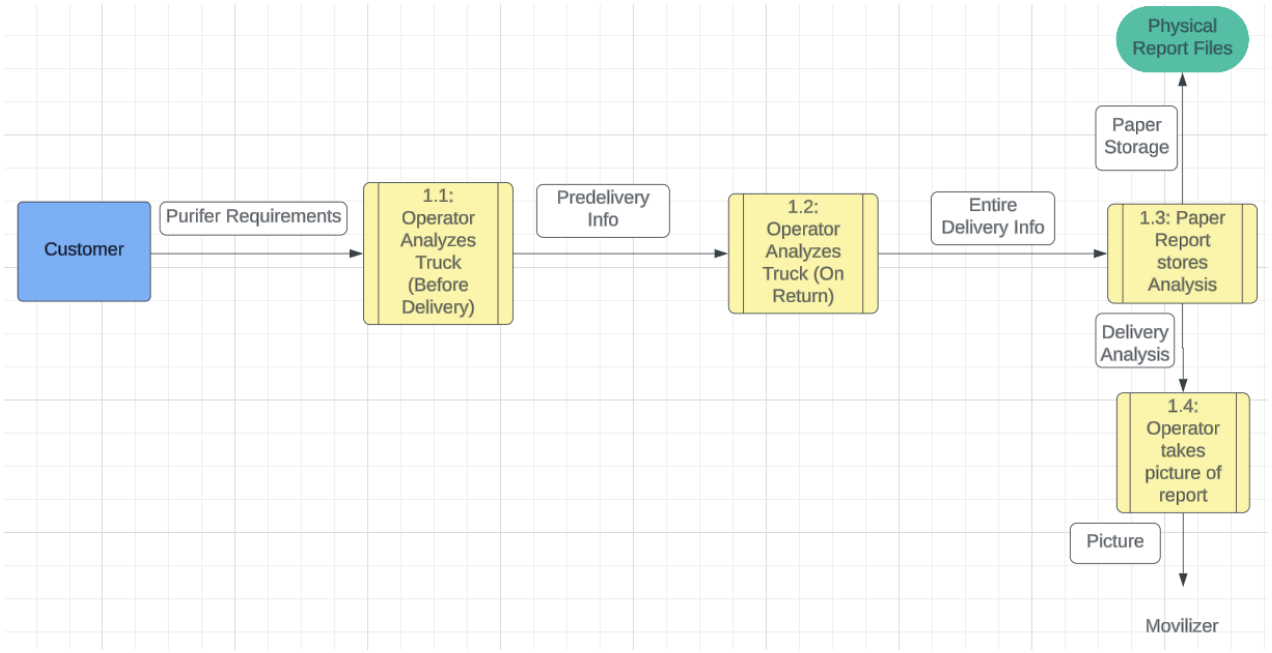

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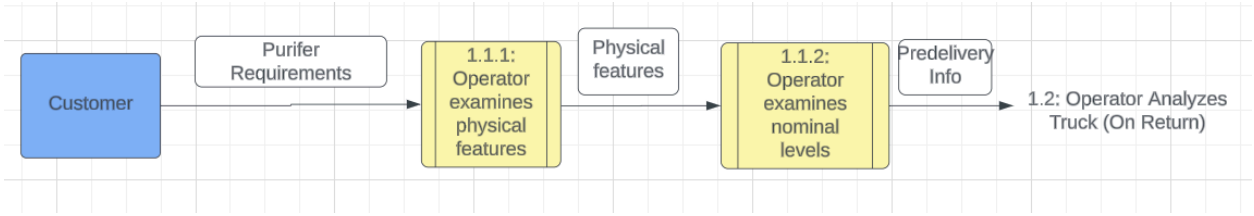

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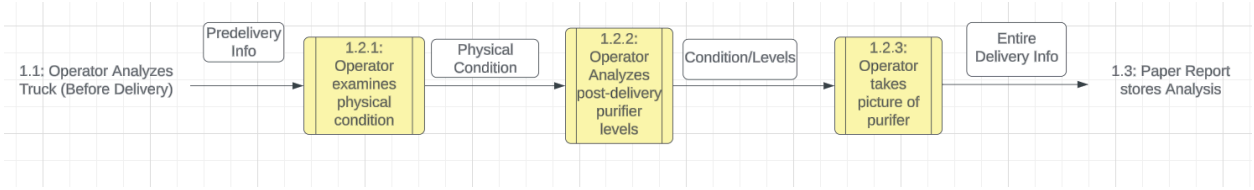

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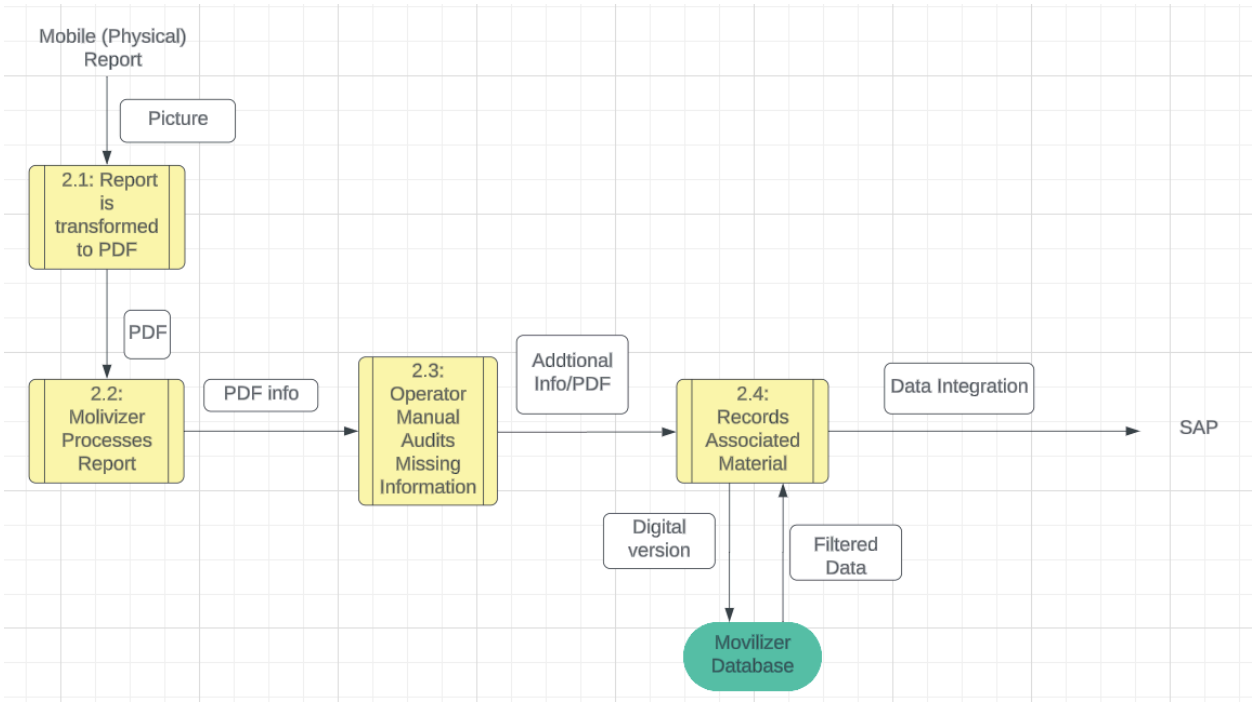

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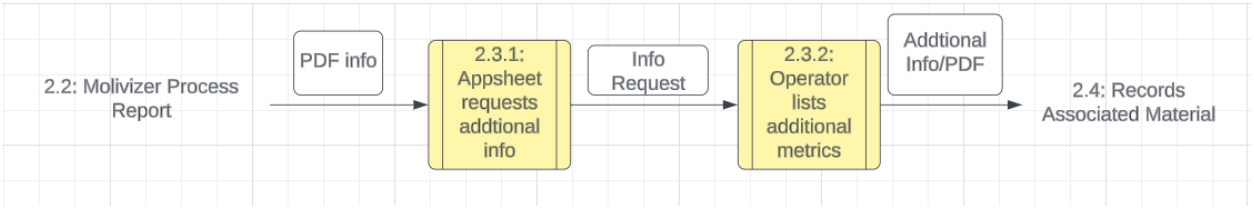

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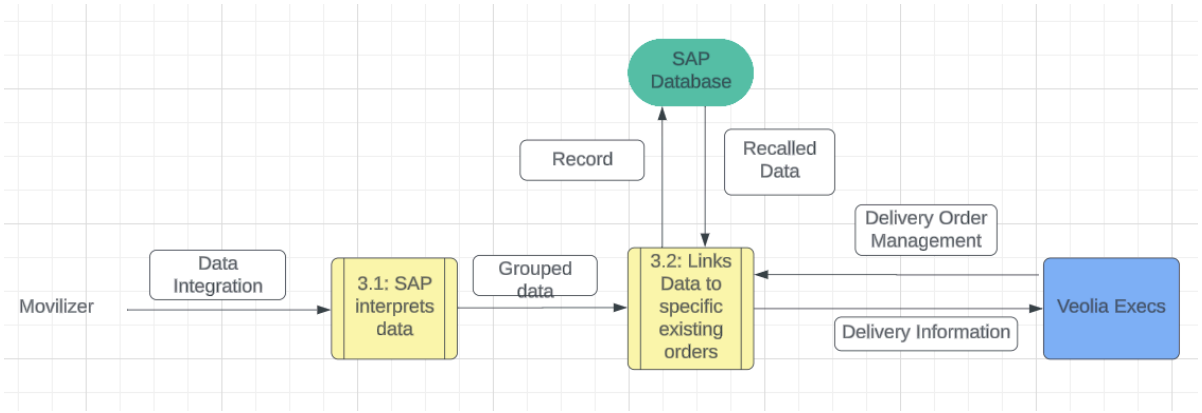
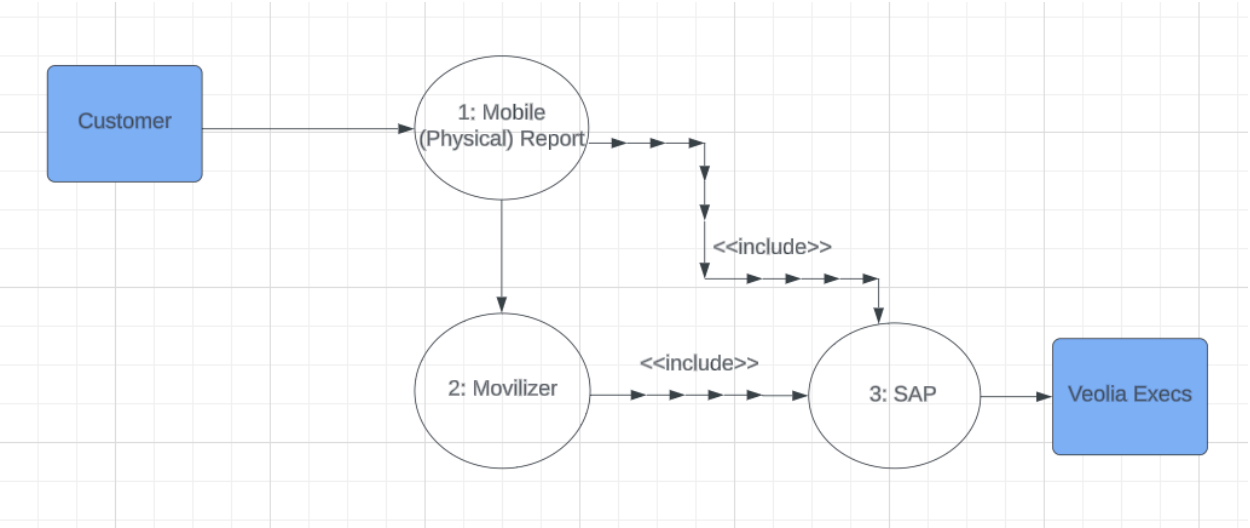


Use Cases



V. Proposed Process Analysis

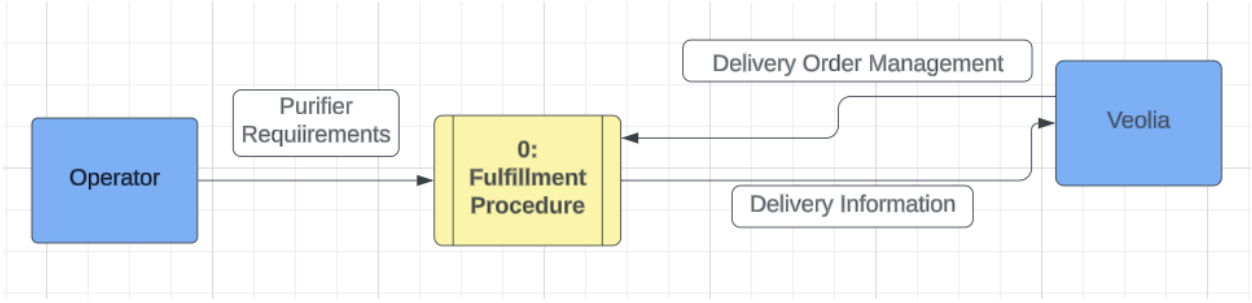
The application we are proposing of employing in delivery inquiries is one that eliminates the need of physical reports. The Plant Manager for the facility of Fontana, California has expressed interest in replacing the necessity of paper documents to align more with Veolia's sustainability values. The ideal application to accomplish our client's ambition is a software application that allows user interface with report templates through tablet hardware. Within the tablet, an operator should be able to create an individual report able to be saved digitally in a cloud computing. The software to be employed should require limited user training and the ability to sync information directly with SAP Software currently in use by Veolia. The information gathered in the digital report must automatically integrate to the delivery order intended for Veolia's records. Additionally, the software should allow certain analytics, such as resin level and gallonage, to be observed and accessible through the hardware.

In discussions with Veolia's Plant Manager, we had proposed two cloud solutions, Cleo and Amazon Cloud, as possible integrated solutions. We chose Cleo at first due to it being a cloud integration software capable of connecting to SAP Software. It can be installed on hardware devices such as tablets meaning it was a possible solution aligning with what was wanted in the new process. We as a group decided not to go forward with this option because it could only be applied on Microsoft platforms. Veolia functions entirely off of Google based applications, making Cleo incompatible with the existing infrastructure. The other solution, Amazon Cloud, was also an integration software that could be connected to SAP Software. Operators would conduct tasks under the Amazon Cloud which can already be linked to SAP Software. However, the same concerns arose with Amazon Cloud being unable to integrate with Veolia's environment it conducts business with. While there was a link between SAP Software and Amazon Cloud, there

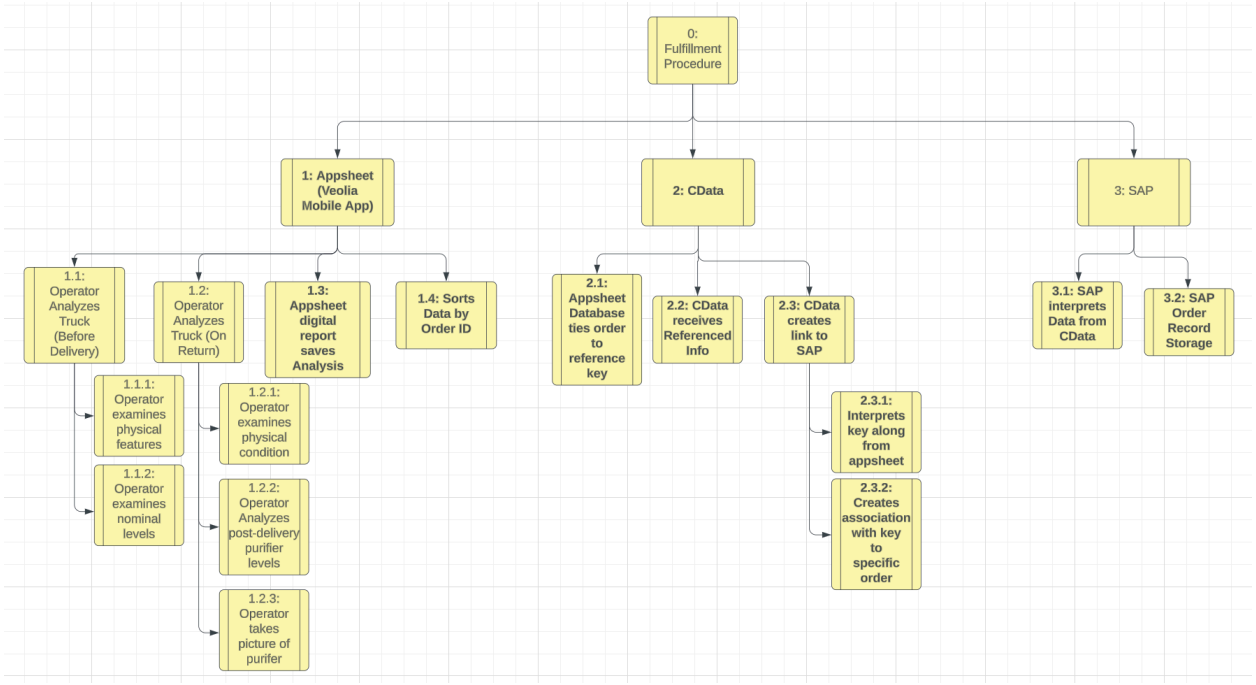
was a foreseeable link between Amazon Cloud and the Google applications Veolia uses. We ultimately decided Amazon Cloud was not a viable solution to the redesign process.

In our endeavor to find a solution that would easily fit with Veolia's Infrastructure, we had to clearly define the present limitations. The alterations to the current business process we are redeveloping removes the reliance on paper products and reduces the time required to process a delivery request by a potential customer. Using tablets to complete purifier inspections eliminates the constant need for operators to print out reports just so they can be discarded once finished. The Paper Report Database that remains untouched will be discarded in the new process as it doesn't serve any conceivable purpose. Embracing the use of software to digitally store report inspection data removes the concern of conversion of data and allows easy data integration into SAP Software. In addition, the use of data software allows Veolia to de-silo delivery information so it can be effortlessly converted without human input. The additional benefit of digitally fulfilling report information removes the need for operators to manually enter information into SAP software the current process necessitates. After careful consideration of the required process, we decided Appsheet linked with CData would be the best solution for Veolia. Appsheet would become the place where Operators list report information while CData would offer the connection between SAP and Appsheet. This limited user training software we are implementing allows operators to save time on delivery inquiries and save Veolia vital resources.

Context Diagram



Functional Decomposition Diagram



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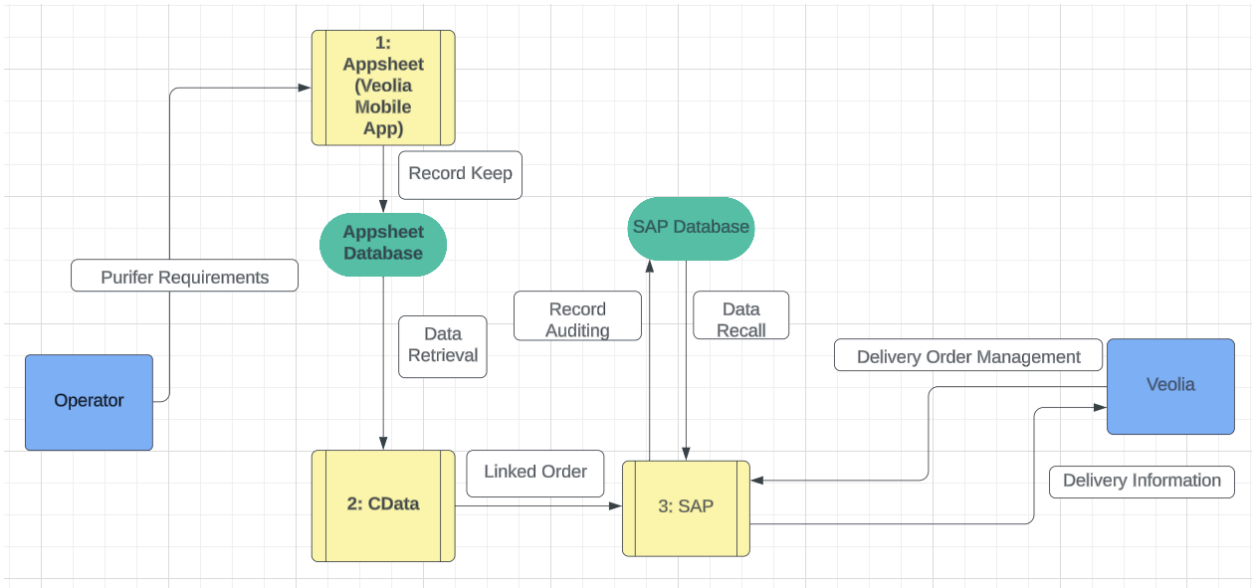

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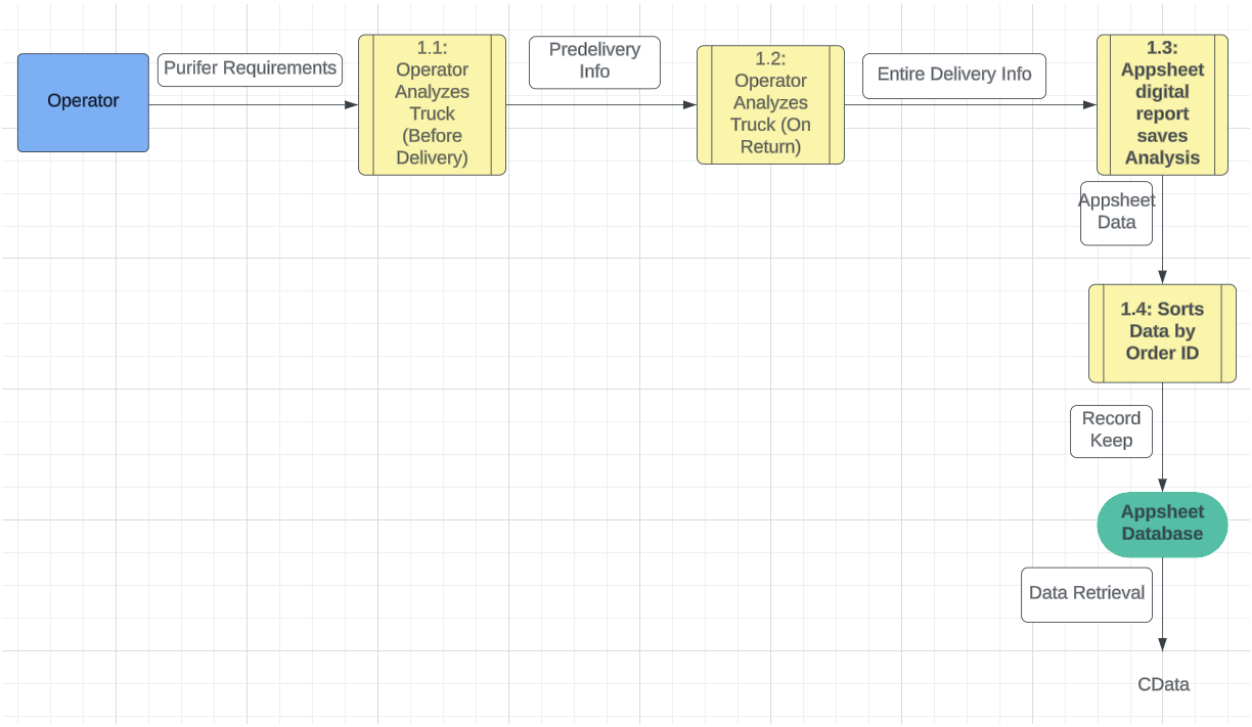

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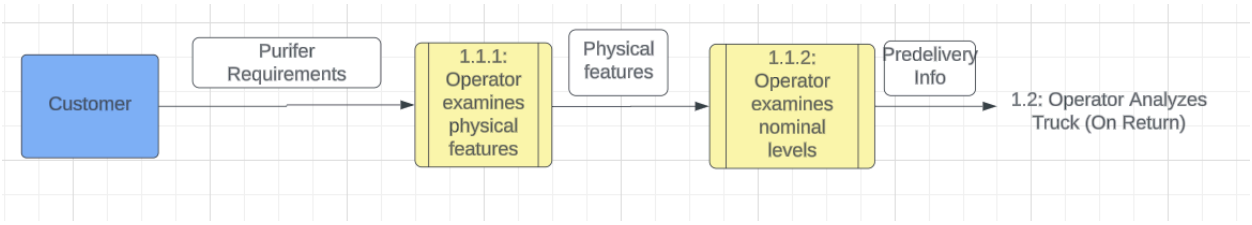

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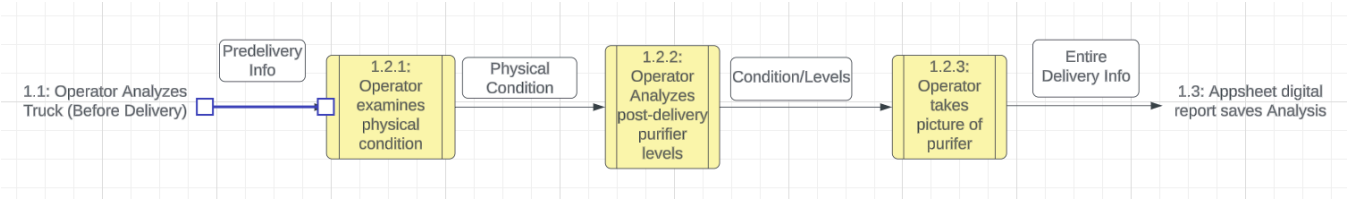

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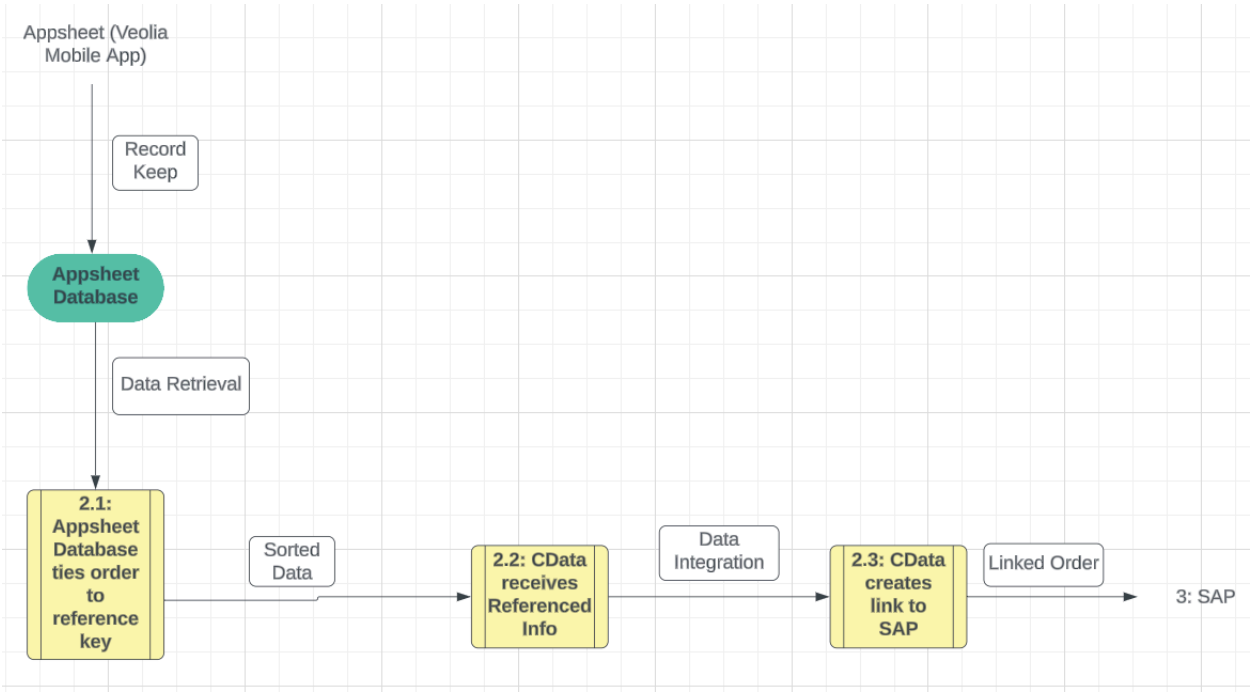

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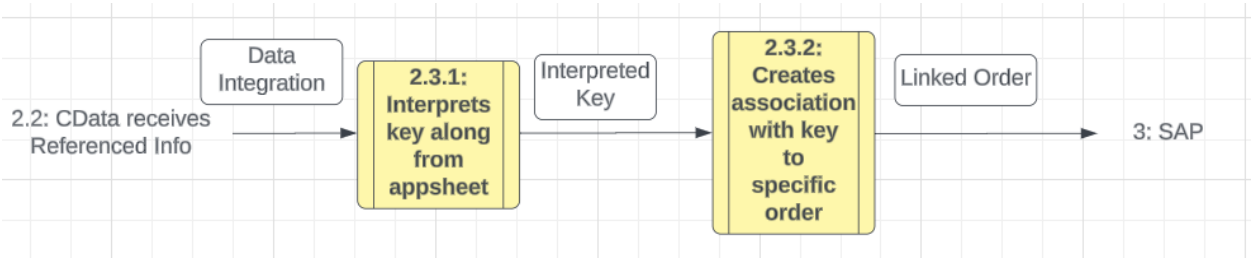

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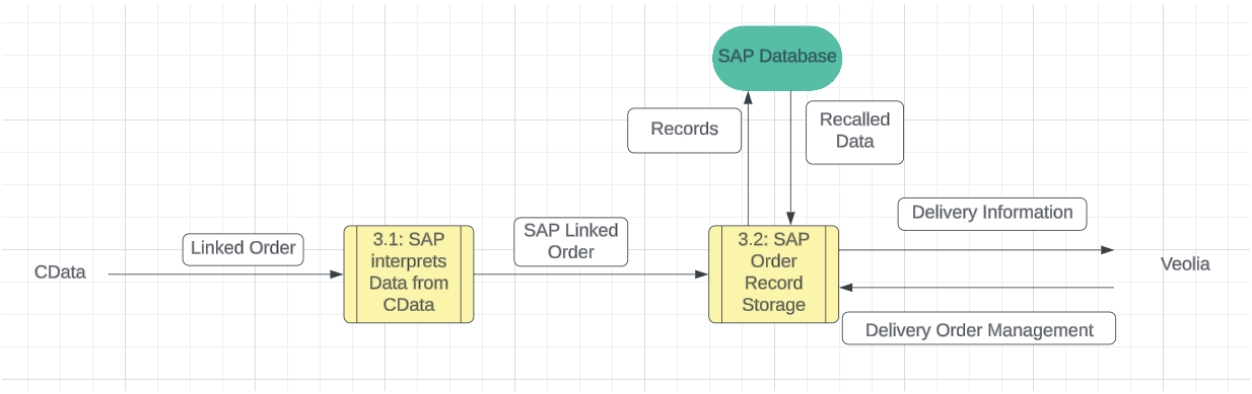
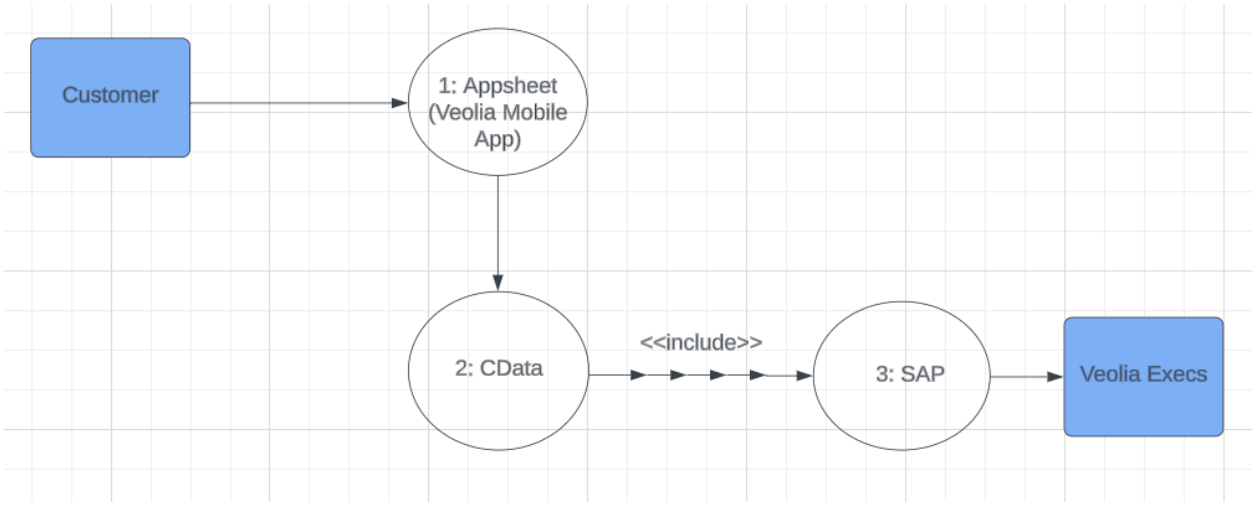


Use Cases



VI. Solution Assessment Section

Veolia is hoping to turn a very lengthy and tedious process into a more condensed and simple solution that satisfies both the delivery and SAP database upload requirements. By turning Veolia's delivery form into a digital process, we reduce the time it takes to have the form ready for the job. We also reduce the time it takes to upload the data to the SAP database by removing the manual inputs to the third party required by the uploading software, Movilizer.

The system we are planning to implement will be able to directly interface with Veolia's existing applications. Discussions with the Plant Manager, Javi, has led us to the conclusion that applications which can interact with Google systems would be the easiest to implement into the company. The solution we have chosen, AppSheet, is a development platform for application software that allows users to create their own applications for their intended use. AppSheet currently exists within Google systems, meaning Veolia can quickly implement this into the existing enterprise. The solution we have chosen in discussions with our client should allow Veolia to maintain an app best suited to fit the necessities of the delivery report process. Our Project Team has partnered with Veolia to develop a Digital Report App that includes all the information related to the paper report. We have created a database the Report App will be linked to, as well as developed the functionality within the App to be downloaded to devices. The database splits up the report into tables with each containing report information tied to a reference key, Order ID, which we will use to link all information to SAP Software. The connection between Appsheet Database and SAP Software will be carried out by CData, a subscription based integration software capable of data integration.

The limitation surrounding this approach places all system maintenance burden on Veolia. The company would be required to constantly preserve system integrity on their

grounds. Complications that arise within the company would place responsibility on the internal staff to resolve the issues. Veolia as a whole would benefit from our proposed system change. More specifically the Plant Manager, Javi, would benefit from having fewer long term costs by having an upfront lump sum cost. His operator's will have an easier way of getting the required data from the form, removing the tedious process of inputting data from the excel sheet. This solution will allow them to have a direct link to the data and the stored SAP database. This proposed process will positively affect Veolia's commitment to their sustainability values. The main people who "lose" from our proposed system would be their third party software provider Movilizer and their paper and printer suppliers. Movilizer would likely be discontinued moving forward and their office supplier would have less opportunities to work with Veolia.

Operational: The new system being implemented is a stride to eliminate Veolia's Reliability on finite resources, like paper. An AppSheet application paired with CData allows better data integration between Operators and the company's SAP database, removing the need for a third party such as Movilizer, to move report information. While Movilizer does offer similar capabilities allowing businesses to create their own tailored apps, the extensive training required unnecessarily wastes Veolia's valuable time. The app we have created within Appsheet is easy to use which should dramatically limit the necessary Operator training. The nature of this new application being Google-based means it will fit easily into Veolia's existing reliance on Google applications. The entire process of reporting deliveries becomes more efficient as Operators are not wasting valuable time fulfilling purifier information by hand and in SAP.

Schedule: Given the constraints on both the project and the company, AppSheet is the alternative fulfilling the self-interests of both parties. AppSheet paired with CData accomplishes Veolia's desires of an application that takes limited user training for internal staff and quick compatibility setup to existing databases. In a fast manner, our group was able to design a Appsheet database and supporting mobile application that meets Veolia's expectations for their current process issues. Given our client's expectation for immediate solutions, we dismissed the option of forming contracts with outside providers and sub-optimized to developing a solution already existing in Veolia's platforms.

Technical: The development application AppSheet doesn't give Veolia an immediate solution to their problems, requiring the company to maintain a process app that best supports their needs. The maturity of this new system would depend on the amount of support and production put into designing an application to support the current process. The knowledge of this new solution would depend on how much time Veolia wants to spend to understand the AppSheet software. This means while Veolia gets the opportunity to design and alter their own application, the result of that development and maintenance

infringes on how much effort they put in. Regardless of the final product, AppSheet's Google-based nature makes it easy for Veolia to find ways to make the product flexible to their current systems.

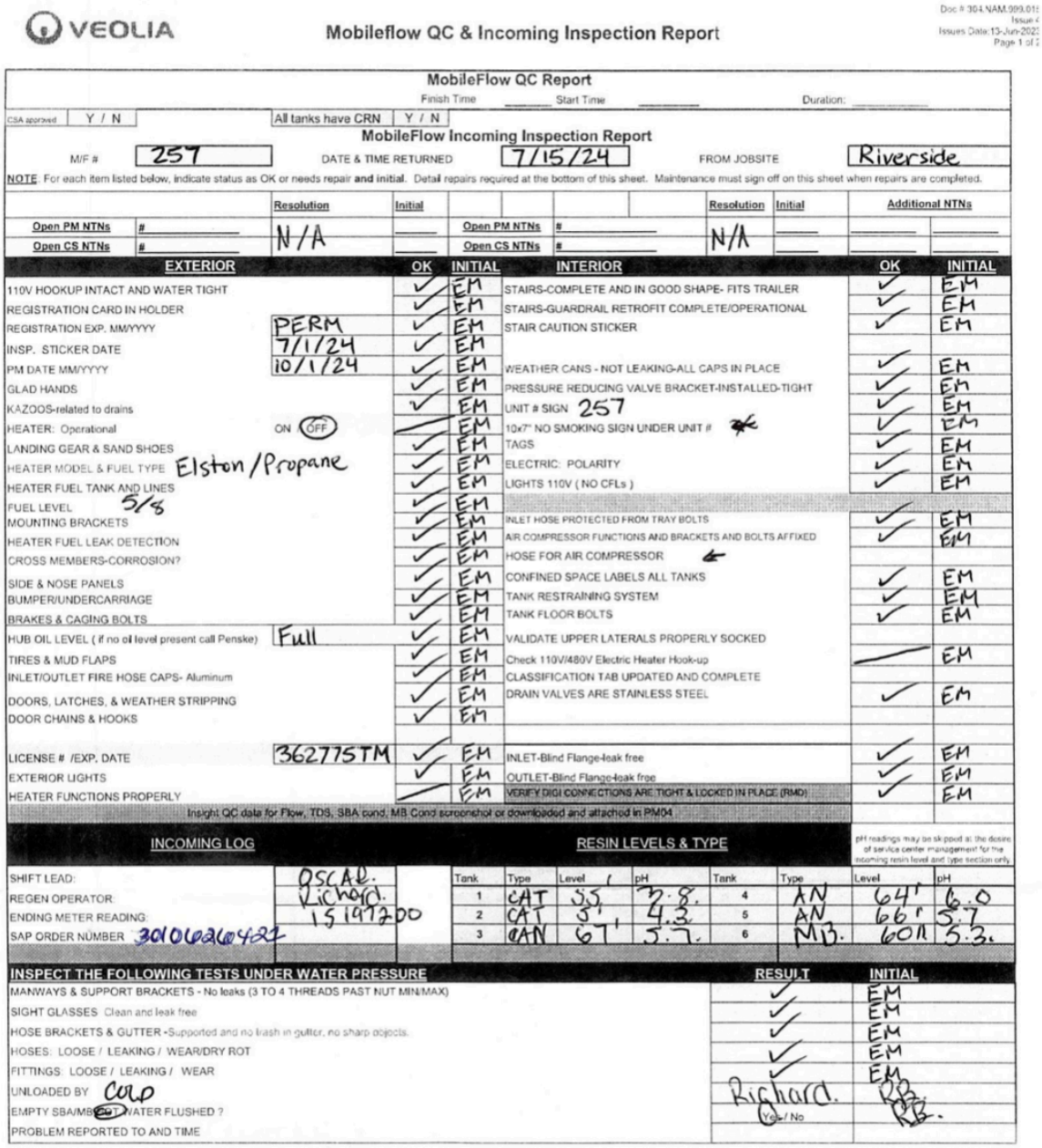
Economical: In terms of cost and time, the company didn't view these factors as an issue or something for our team to resolve. Their main focus and goal for our team was to convert their tedious paper process to a digital process that links to their SAP Databases. However, with the implementation of our process, we were able to cut their monthly office supply expense from about $86.00 a month to about $21.50 a month by limiting the need for paper, ink cartridges, pens and pencils, and other miscellaneous items. Given the fact that our new app will likely be in use for the next two years, we will be saving Veolia approximately $1,548 ((86*24)-(21.50*24)) from office supplies alone. The cost to switch from Movilizer to CData would not cost the company anything more or less as the monthly expenses will stay approximately the same. The only expense that Veolia will incur from this new process would be the cost of three new iPads, which will cost them roughly $1,500. Given all these factors, we expect Veolia to incur an ROI of (($1,548-$1,500)/$1,500)) = 3.2%. While not a significant ROI, the more meaningful benefit is Veolia reaching their Mission Statement by reducing the amount of natural resources they use. We were also able to save the team an average of ten to fifteen minutes a job, roughly an hour and a half a day, by reducing the manual input, uploading time, and simplifying the form while still meeting necessary components. The new system would require a large upfront investment from Veolia for their new IPads and other safety equipment such as cases and security measures. However, after this upfront expense, Veolia won't have to pay for Movilizer to make data transfers or have to spend more money on office supplies related to the delivery process. The Appsheet software is already being paid for by Veolia's license with Google related software so no additional cost will be incurred at this moment.

Implementation Plan: Following our report, we believe Veolia should coordinate with their internal Information Technologies team to polish the application we have created. Given the short turnaround for this project, we were ultimately unable to provide our client with a mobile app ready for immediate use. Our group was able to develop an extensive prototype, adding report information Operators can interface with and additional features such as being able to take pictures. The IT team would be responsible for ensuring other items, such as metrics or links, can be interfaced within the custom app. We recommend Veolia to study and really look into Appsheet to see how well they can work with to formulate a finalized packaged app capable of implementing into day-to-day operations. In addition, the IT team is also liable to establish an existing connection between Appsheet and SAP Software using CData integration, or other tools best deemed fit. Due to the confidentiality constraint placed upon our group, we are

unable to access the company's existing SAP Database and thus, incapable of providing a direct link between the app and SAP Software. Discussions and consistent feedback between the IT team throughout the final development process would help Veolia better provide a final solution that they would be satisfied with.

VII. Exhibits

Example Report (Referenced when we created digital version)



VEOLIA

Mobileflow QC & Incoming Inspection Report

Doc # 304.NAM.999.01
Issue
Issues Date:13-Jun-202
Page 1 of 2

MobileFlow QC Report

Finish Time _____ Start Time _____ Duration: _____

CSA approved: Y / N — All tanks have CRN: Y / N

MobileFlow Incoming Inspection Report

M/F # 257 — DATE & TIME RETURNED 7/15/24 — FROM JOBSITE Riverside

NOTE: For each item listed below, indicate status as OK or needs repair **and initial**. Detail repairs required at the bottom of this sheet. Maintenance must sign off on this sheet when repairs are completed.

		Resolution	Initial			Resolution	Initial	Additional NTNs	
Open PM NTNs	#	N/A		Open PM NTNs	#	N/A			
Open CS NTNs	#			Open CS NTNs	#				

EXTERIOR		OK	INITIAL	INTERIOR	OK	INITIAL
110V HOOKUP INTACT AND WATER TIGHT		✓	EM	STAIRS-COMPLETE AND IN GOOD SHAPE- FITS TRAILER	✓	EM
REGISTRATION CARD IN HOLDER		✓	EM	STAIRS-GUARDRAIL RETROFIT COMPLETE/OPERATIONAL	✓	EM
REGISTRATION EXP. MM/YYYY	PERM	✓	EM	STAIR CAUTION STICKER	✓	EM
INSP. STICKER DATE	7/1/24	✓	EM			
PM DATE MM/YYYY	10/1/24	✓	EM	WEATHER CANS - NOT LEAKING-ALL CAPS IN PLACE	✓	EM
GLAD HANDS		✓	EM	PRESSURE REDUCING VALVE BRACKET-INSTALLED-TIGHT	✓	EM
KAZOOS-related to drains		✓	EM	UNIT # SIGN 257	✓	EM
HEATER: Operational	ON (OFF)		EM	10x7" NO SMOKING SIGN UNDER UNIT #	✓	EM
LANDING GEAR & SAND SHOES		✓	EM	TAGS	✓	EM
HEATER MODEL & FUEL TYPE	Elston / Propane	✓	EM	ELECTRIC: POLARITY	✓	EM
HEATER FUEL TANK AND LINES		✓	EM	LIGHTS 110V (NO CFLs)	✓	EM
FUEL LEVEL	5/8	✓	EM			
MOUNTING BRACKETS		✓	EM	INLET HOSE PROTECTED FROM TRAY BOLTS	✓	EM
HEATER FUEL LEAK DETECTION		✓	EM	AIR COMPRESSOR FUNCTIONS AND BRACKETS AND BOLTS AFFIXED	✓	EM
CROSS MEMBERS-CORROSION?		✓	EM	HOSE FOR AIR COMPRESSOR		
SIDE & NOSE PANELS		✓	EM	CONFINED SPACE LABELS ALL TANKS	✓	EM
BUMPER/UNDERCARRIAGE		✓	EM	TANK RESTRAINING SYSTEM	✓	EM
BRAKES & CAGING BOLTS		✓	EM	TANK FLOOR BOLTS	✓	EM
HUB OIL LEVEL (if no oil level present call Penske)	Full	✓	EM	VALIDATE UPPER LATERALS PROPERLY SOCKED		
TIRES & MUD FLAPS		✓	EM	Check 110V/480V Electric Heater Hook-up	—	EM
INLET/OUTLET FIRE HOSE CAPS- Aluminum		✓	EM	CLASSIFICATION TAB UPDATED AND COMPLETE		
DOORS, LATCHES, & WEATHER STRIPPING		✓	EM	DRAIN VALVES ARE STAINLESS STEEL	✓	EM
DOOR CHAINS & HOOKS		✓	EM			
LICENSE # /EXP. DATE	362775TM	✓	EM	INLET-Blind Flange-leak free	✓	EM
EXTERIOR LIGHTS		✓	EM	OUTLET-Blind Flange-leak free	✓	EM
HEATER FUNCTIONS PROPERLY		—	EM	VERIFY DIGI CONNECTIONS ARE TIGHT & LOCKED IN PLACE (RMD)	✓	EM

Insight QC data for Flow, TDS, SBA cond, MB Cond screenshot or downloaded and attached in PM04

INCOMING LOG		RESIN LEVELS & TYPE							pH readings may be skipped at the desire of service center management for the incoming resin level and type section only.	
SHIFT LEAD:	OSCAR.	Tank	Type	Level	pH	Tank	Type	Level	pH	
REGEN OPERATOR:	Richard.	1	CAT	5.5	7.8.	4	AN	64"	6.0	
ENDING METER READING:	15197200	2	CAT	5"	4.3.	5	AN	66"	5.7	
SAP ORDER NUMBER	3010626042	3	CAN	67"	5.7.	6	MB.	60"	5.3.	

INSPECT THE FOLLOWING TESTS UNDER WATER PRESSURE	RESULT	INITIAL
MANWAYS & SUPPORT BRACKETS - No leaks (3 TO 4 THREADS PAST NUT MIN/MAX)	✓	EM
SIGHT GLASSES Clean and leak free	✓	EM
HOSE BRACKETS & GUTTER -Supported and no trash in gutter, no sharp objects.	✓	EM
HOSES: LOOSE / LEAKING / WEAR/DRY ROT	✓	EM
FITTINGS: LOOSE / LEAKING / WEAR	✓	EM
UNLOADED BY COLD	Richard.	RB.
EMPTY SBA/MB (WET) WATER FLUSHED ?	Yes / No	RB.
PROBLEM REPORTED TO AND TIME		

VEOLIA

Mobileflow QC & Incoming Inspection Report

FLOW CHARACTERICSTICS-INCOMING

McCrometer Flow (GPM)	Thornton Flow(GPM)	Raw	PRV	MB In	MB Out	DI Water	Δ for (Raw - DI)	Pressure test	Operator initial
0	0	75	70	71	71	72	3	Leak? Yes / No	RB
120	500	54	46	40	28	29	25	Leak? Yes / No	RB

Guide: Pressure drop < 30 PSI @ 200 gpm for STD MFDI, <20 for HF or SF MFDI@200 gpm, (Raw-DI outlet) (6000s <30 psi @150 gpm. Consult pressure drop curve for other applications and flow rates. If exceeds make needed repairs before final QC.

Gauges must be within 4 PSI of each other at 0 gpm / 50psi
Flows must be +-5%

LEAK TEST

FUNCTIONAL TEST OF POP-OFF VALVE COMPLETED@	95 PSI	POP-OFF VALVE DOES NOT LEAK UNDER ALL TESTS.	✓
M800 Banner should state "VEOLIA"	✓	ENSURE PANEL BOLTS ARE SNUG AND NOT STRIPPED	✓
CONDUCTIVITY METER Model:	MAX M800	CONDUCTIVITY METER CALIBRATION DUE DATE:	4/22/25
Automatic shutdown on high conductivity?	@ .5 µMHOS	HIGH WATER ALARM (Tested and functions)	✓
LOSS OF POWER: Checked and functions?	✓	PRV FUNCTIONING PROPERLY (Regulates pressure and shutsdown properly)	✓
CONDUCTIVITY SOLENIOD PROPERLY INSTALLED: Cord attached at wall and secured on posts with nameplate and redcap/clip.	✓	LOP SOLENIOD PROPERLY INSTALLED: Cord attached at wall and secured on posts with nameplate and redcap/clip	✓
OUTLET FILTER CAN: INNER O-RING (Inspected)	✓	OUTER O-RING (Inspected) OK	Bag/Micron: ✓
CALIBRATION DUE DATE: 4/22/25 McCROMETER	✓	METER PACKAGE IN "HAND" FOR NON-DI APPLICATION:	✓
METER PACKAGE IN AUTO FOR DI APPLICATION:	✓	VERIFY MCCROMETER & THORNTON FLOWS MATCH AT 200 GPM(RMD)	No
ALL PM AND SN NTNS CLOSED. List any left open with reason in comments	✓	OUTLET CHECK VALVE INSTALLED AND TESTED	✓

PROBLEM REPORTED TO AND TIME

OUTGOING LOG

DATE & TIME STARTED:	7-17-24 8AM
SiO_2 STANDARD:	
DR #	

INCOMING RANKING

Mobile Equipment Ranking

	McCROMETER	THORNTON	
QC EMR	15,210400		Mx90 totalizer should be reset by cycling through QC mode. QC Total gallons difference should be less than 2%
QC BMR	[illegible]	15,204,300	
QC TOTAL GALLONS	6,100		
INFLUENT pH	6.75	INFLUENT CONDUCTIVITY:	.94
Spectrophotometer ID#		CONDUCTIVITY METER #	0523

See 209.NAM.003 Loading and QC Specs for Mobile Equipment that lists specs for all loading schemes.

Outgoing Configuration:

Q. C. RESULTS

TANK	Resin Level (±2" of spec)	Resin Type/From	SiO_2 (ppb)	µMHOs	pH	Hardness	Na+	TOC	Operator initial
1	53"	CAT / 7		41.02	4.05				MC
2	53"	CAT / 7		42.85	3.94				MC
3	72"	AN / M1	4.36	8.23	8.33				MC
4	72"	AN / M1	5.10	8.26	9.35				MC
5	72"	AN / M1	5.86	17.76	9.38				MC
6	57"	MB / 12	5.72	.07	6.42				MC.
Eff. Can	N/A	N/A							
Mixed Bed Inlet Conductivity		____mmhos	If the MB inlet conductivity is higher than any Anion verify valve alignment and check crossovers.						

NOTE: For each item listed below, indicate status as OK or needs repair **and initial**. Detail repairs required at the bottom of this sheet. Maintenance must sign off on this sheet when repairs are completed.

FLOW CHARACTERICSTICS- OUTGOING

McCrometer Flow (GPM)	Thornton Flow(GPM)	Raw	PRV	MB In	MB Out	DI Water	Δ for (Raw - DI)	Pressure test	Operator initial
0	0	50	40	40	40	40	10	Leak? NO Yes / No	MC
100	120	30	28	22	18	25	5	Leak? NO Yes / No	MC

Guide: Pressure drop < 30 PSI @ 200 gpm for STD MFDI, <20 for HF or SF MFDI@200 gpm, (Raw-DI outlet) (6000s <30 psi @150 gpm. Consult pressure drop curve for other applications and flow rates. If exceeds need approval and PM NTN entered.

LEAK TEST

Automatic shutdown on high conductivity?	✓	@ .5 µMHOS	HIGH WATER ALARM (Tested and functions) ✓
SHIFT LEAD APPROVAL FOR BLOWDOWN:	✓	BLOWDOWN WITH Air / Nitrogen	✓
UNIT CLEAN/NO TRASH OR RESIN:	✓	ENSURE UNIT IS FULLY DRAINED (ELIMINATE FREEZE DAMAGE POTENTIAL)	✓
UNIT COMPLETED AND IN RUN CONFIGURATION*:	✓		
LOW TEMP ALARM TESTED AND RESET TO 35F	✓	STAIRS-COMPLETE AND IN GOOD SHAPE- FITS TRAILER	✓
OUTLET CHECK VALVE INSTALLED AND TESTED	✓	IS THIS UNIT A SUPERFLOW DI? IF YES, ARE VALVES SET INTO DESIRED CONFIG?	✓

EQUIPMENT CHECK-OUT

OPERATING PROCEDURE/DIAGRAM	✓	FUSES FOR THORNTON METER 770MAX only (5)	✓
FIRE WRENCH, 3105264 & SPARE ORING 3167644	✓	2 ea. SAMPLE BOTTLES, 3105665	✓
2 ea. FILTER BAGS, 5 micron 3104749 and 100 Micron 3105181	✓	2 ea. 4" FEMALE NST X 4" SS FLANGE *, 3107108	✓
2 ea 4ft. CHAIN,GALV,5/16",GRADE 30,45004, 3136781	✓	CHAINQUICKLINK,SS,5/16",74627 3136182	✓
2 ea. 2.5" DOUBLE FEMALE COUPLINGS, 3104781	✓	2 ea. 4" FEMALE NST X 2.5" MALE NST **	✓
4" BLIND FLANGE - SPARE, 3106453	✓		

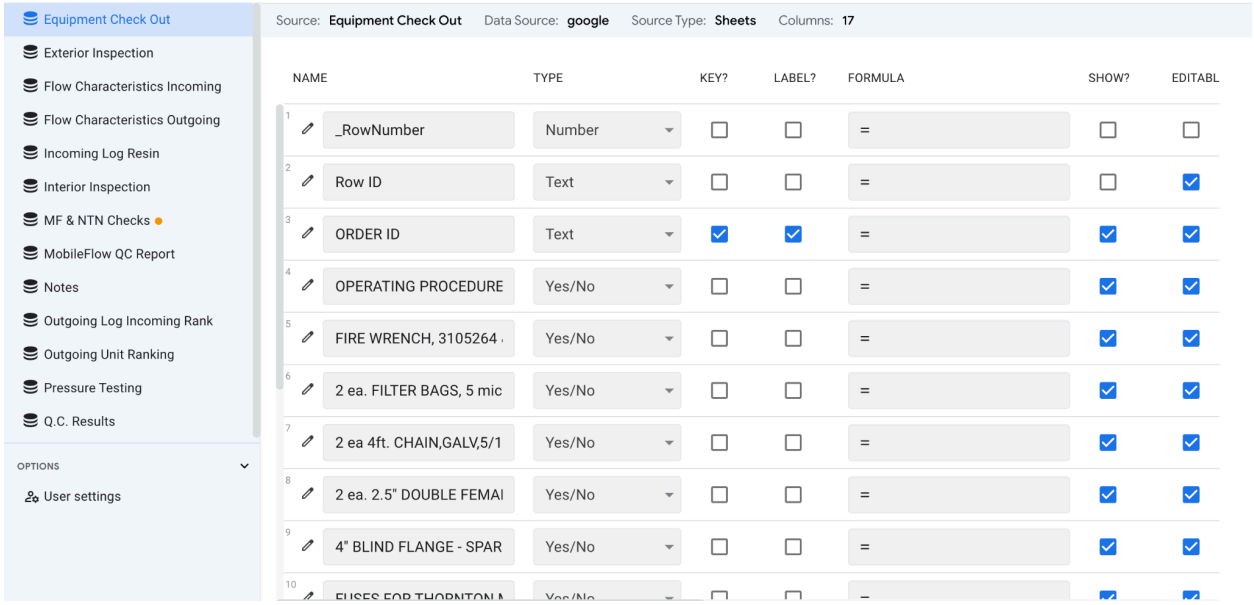
* = Optional, ** = for high flow units only.

*Run Configuration - All crossovers and tank valves aligned for normal operation except Main Inlet and Main outlet valves shut (if there is no main inlet and or outlet shut first train inlet and or last train outlet valves.)

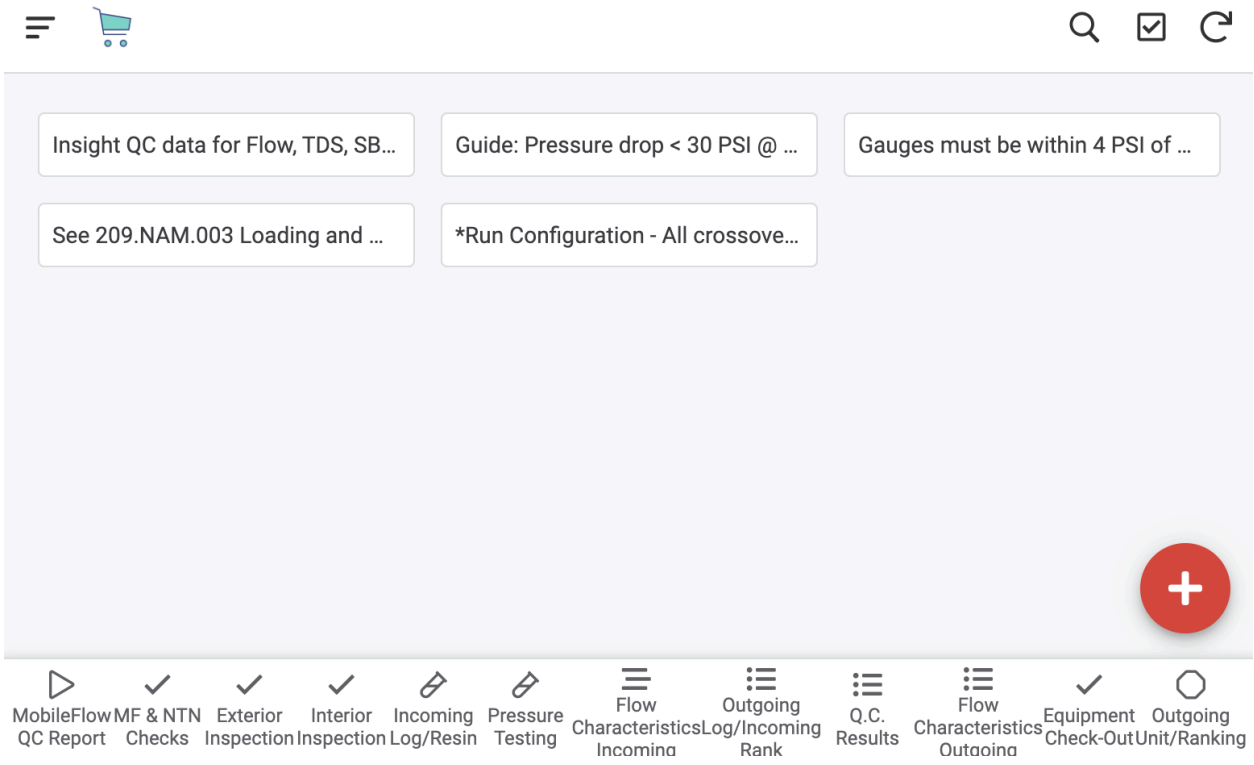
OUTGOING UNIT RANKING		Mobile Equipment Ranking
SHIFT LEAD - UNIT READY FOR LOADING		

Remarks: flow on thornton meter is too high. does not match.
Missing air hose. Tank 2 air vent Leaking.

Appsheet Database (Equipment Check Out used as example)



Developed Appsheet App



VIII. Conclusion

Our team is happy to be working with Veolia North America to help improve their delivery processes. We are thankful to them for giving us this opportunity and trusting us to work closely with some of their department leaders to work on this process. Using

Veolia's guidance and our team's collective abilities, we have developed an effective solution able to be implemented in Veolia's day-to-day operations. After weekly discussions with Javier on solutions, to satisfy the company's expectations, we have created a digital reporting app tailored for the sole use of processing plant deliveries using the company's new found interest in Appsheet. The Google-based software, Appsheet, allowed us to design an application able to be installed on Veolia's hardware. Paired with CData to allow data integration, the custom Appsheet application is able to connect to the company's existing data banks without running the risk of siloed information. We strongly believe this solution we have formulated is the perfect alternative to replace the recurring costs of paper, and is a further stride towards upholding Veolia's fundamental values of sustainability.

IX. Post mortem project review

Kelcey Howard: The project presented several challenges, especially at the beginning. Tight deadlines made it difficult to navigate the new system and construct the application. I remember spending long hours trying to understand AppSheet and its features. At one point, it felt overwhelming, as if we were running in circles without making significant progress. However, once we started organizing our efforts and communicating more effectively as a team, things began to fall into place. Despite the initial hurdles, the project ultimately succeeded. The new technology-based solution not only met Veolia's sustainability goals but also significantly improved the efficiency of the reporting process. Operators now spend less time on each delivery, and the transition to a digital system has reduced waste and streamlined data entry. Personally, I found the project both challenging and rewarding. The initial difficulties were daunting, but as our team became more organized and collaborative, the process became more manageable. This experience highlighted the need for careful planning and flexibility, as well as the value of effective communication and teamwork in achieving successful outcomes.

Ethan Wu: When we started the project, I was frightened with the idea of having to work with an already established corporation to redesign one of their processes. I didn't know what the requirements of this project were specifically and how much was expected in the end results through our group's contractual relationship with our company. If I had to change anything it would be the time commitment we spent each week on the project. As the deadlines became closer and the milestones got bigger, I found myself spending a lot more time than I would have liked to spend on the project in the final weeks. Knowing what I know now, our group should have spent more time in the beginning stages of the project. Even with the difficulty of this project, it showed how capable we as a team are to generate solutions within a corporate environment. This project made me develop other perspectives surrounding business and being able to develop an app hands-on, is a skill I can carry on through out my future career. Nonetheless, I believe our group's

willingness to submit a quality end result made us take the necessary strides for a project of this caliber.

Parker Shanor: The beginning of this project brought us many unique challenges that our team as a whole had not yet experienced and had very little technical skills to accomplish. We had a group of random people with differing majors and areas of expertise that was able to come together to overcome a task that I believed to be too much to ask from inexperienced college students. If I were to personally change anything about this project, I would like to take initiative sooner rather than later to not stress out about picking a company and not knowing the parameters of what to even do or look for. If we spent more time earlier in the semester and met more consistently, our efforts wouldn't have been as strained. Despite these shortcomings, our team was able to create a project we were proud of and something we can use in the future for our careers. Our group's willingness to overcome these challenges really shined through in our final project for the client.

Jabir Mohamed: Working on the Veolia Water Technologies & Solutions project was a rewarding and educational experience. The process began with our team analyzing the existing paper-based reporting system, followed by brainstorming sessions to identify a digital alternative. We then decided on using AppSheet, a Google-based platform, to create a custom application tailored to Veolia's needs. The collaborative nature of the project fostered strong team building, as we worked together to design, test, and refine the application, ensuring it integrated seamlessly with their SAP system using CData. Personally, the project provided me with valuable insights into digital transformation processes and deepened my understanding of how technology can streamline operations in the environmental management field. Overall, this project not only contributed to my professional growth but also reinforced my commitment to sustainability and innovation in my work.

X. Client Information

Javier Rivas
Plant Manager
javier.rivas@veolia.com
(909) 368-7944
501 E Santa Ana Ave,
Bloomington, CA 92316

Justin Wu
Human Resources Manager
justin.wu@veolia.com
(636) 634-5074