Lime Quality Data Application

TO: Lime Specialties Team
DATE: April 23, 2024
SUBJECT: Lime Application Overview

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Overview

The Lime Data application enables employees to report lab testing information and data for producing Lime specialties products. The application contains all lab testing results for quality purposes to meet each client's unique requirements.

NOTE: The Lime Data application access and appearance will vary depending on the user type to reflect the accesses needed to effectively complete their job responsibilities. All Lime Data application users will be able to see high-level items. All potential options will be covered in the documentation.

Logging into the Lime Data Application

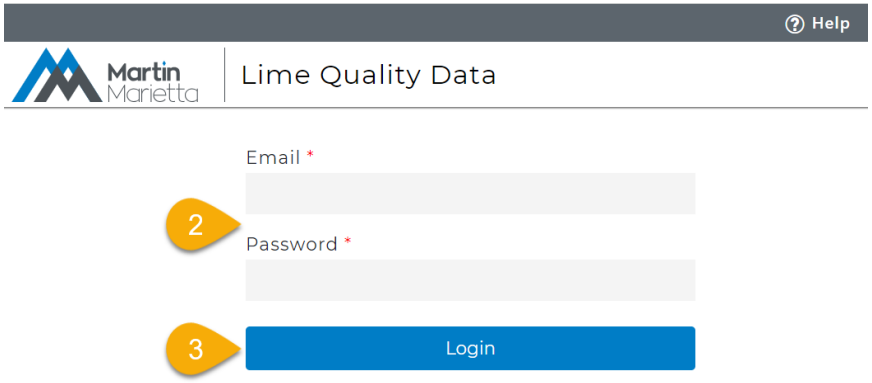
To login to the Lime Data Application:

1. Navigate to https://limequalitydata.martinmarietta.com (Opens a new tab)

2. Enter login information

NOTE: The login will be the same as the user's standard Martin Marietta sign-on.

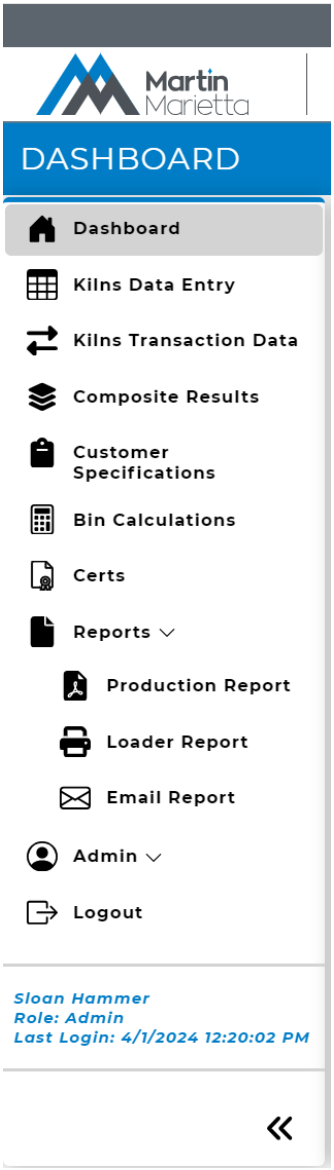
3. Click “Submit”



Navigation Panel

The navigation panel enables users to toggle between the different dashboards and tools in the absence of search functionality.

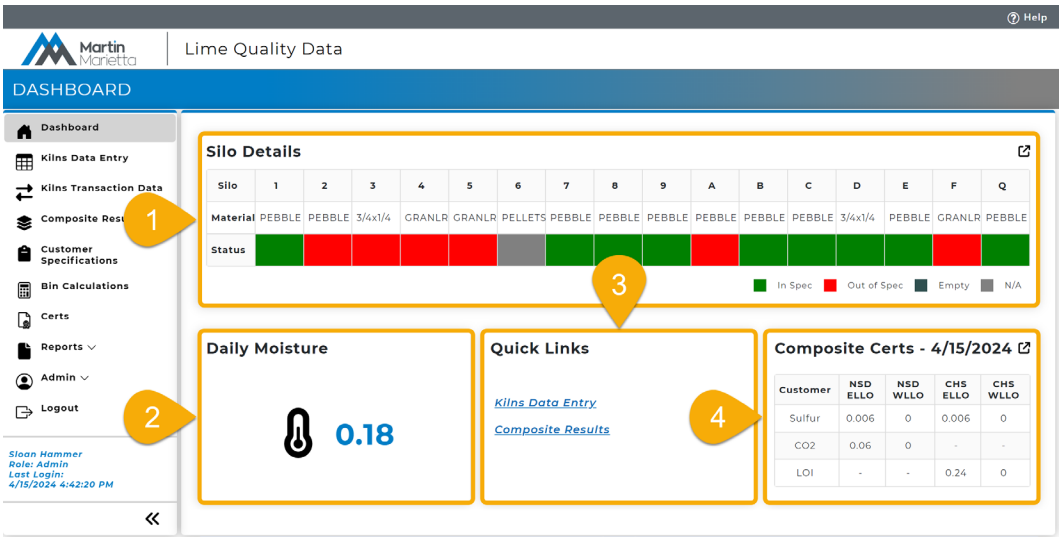
NOTE: The available options will vary depending on the user's access. Not all options displayed in the documentation will be available to all users. All possible options are documented.



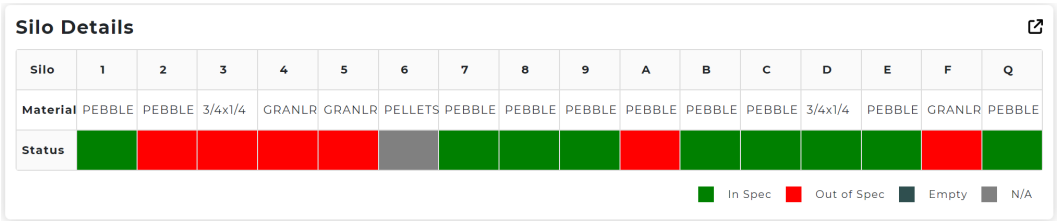
Home Dashboard

The Home dashboard is the default landing screen for all users after login. There are four sections of the Home dashboard:

- Silo Details
- Daily Moisture
- Quick Links
- Composite Certs



1. Silo Details



Silo – Designates the silos and the product type in each silo and their status for the silos at the Lime site.

- Silos 1, 2, 3, 4, 5, 6, 7, 8, and 9 are at the **WEST** Lime load out
- Silos A, B, C, D, E, F, and Q are at the **EAST** Lime load out

Material – For each silo, the material contained must be designated. The options include:

- **Pebble** – ¾" diameter to 2 ½" diameter pieces.
- **¾ x ¼** - ¼" diameter to ¾" diameter pieces.
- **Granular** – Anything smaller than a ¼" diameter is granular.
- **Pellets** – Compacted briquettes of granular lime.

Status – To determine if a product is **In Spec** or if a product is **Out of Spec**, etc.:

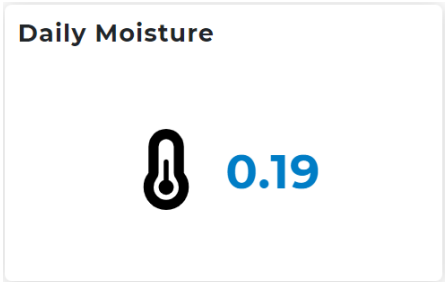
- **In Spec** – If the lab tests **surpass** the quality thresholds for the strictest clients, the internal specifications will mark the material in the silo as in spec.
- **Out of Spec** – If the lab tests **do not meet** the quality thresholds for the strictest clients, the internal specifications will mark the material in the silo as out of spec.
- **Empty** – The silo is currently empty and has no product to measure or test.
- **N/A** – Marker for Silo 6. The material in Silo 5 is used to create pellets to be placed in Silo 6.

NOTE: When a product is noted as being Out of Spec, it is often delegated to customers with less strict standards for the product. Additionally, production will be alerted to make changes to clean up the future product.

2. Daily Moisture

Test done by night shift lab technician. The test includes taking the CO2 result and the LOI result. The LOI result minus the CO2 result is the Daily Moisture number.

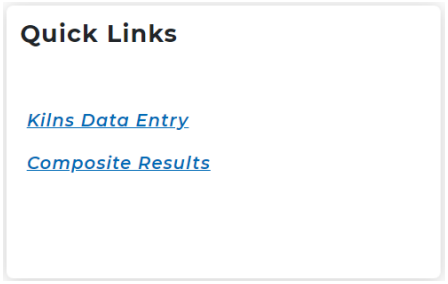
The daily moisture is the amount of moisture in the product.



3. Quick Links

Displays available links directly to select pages within the application.

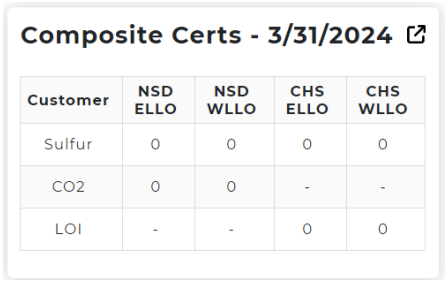
The items within the quick links page can also be accessed through the **Navigation Panel**.



4. Composite Certs

Displays Sulfur, CO2, and LOI data for a select few customers. The table is a quick view of the lab data that is entered into the truck and rail database.

NOTE: A dash in one of the spaces indicates data not collected for the specific client.

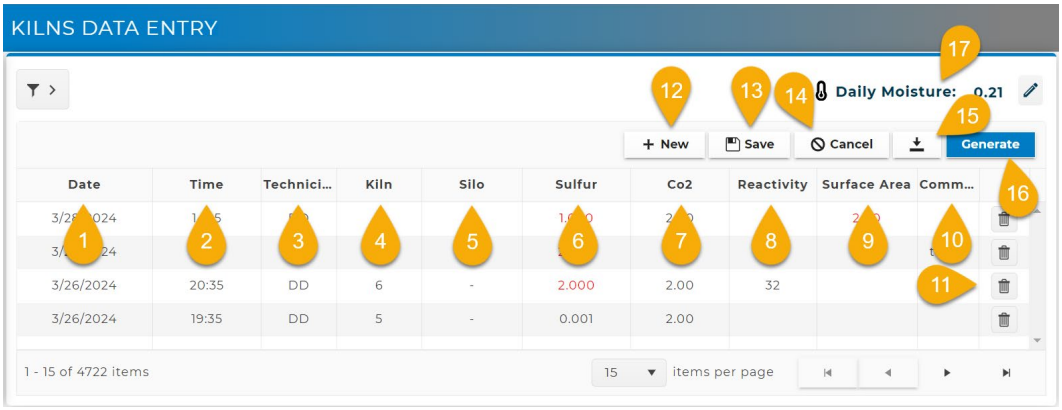


Composite Certs - 3/31/2024

Customer	NSD ELLO	NSD WLLO	CHS ELLO	CHS WLLO
Sulfur	0	0	0	0
CO2	0	0	-	-
LOI	-	-	0	0

Kilns Data Entry

The primary page where lab technicians will enter data during lime testing.



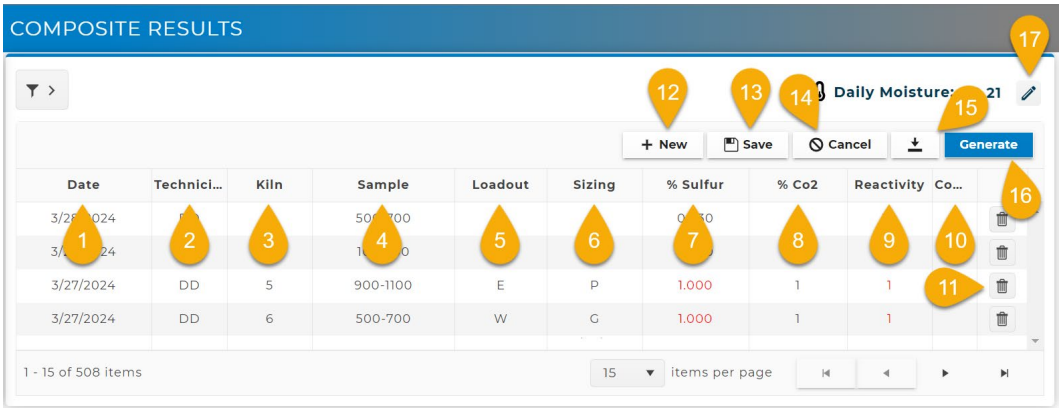
1. **Date** – The calendar date of when the test was done.
2. **Time** – Time when the testing was completed. Marked in 24-hour time. Set hour and minute.
3. **Technician** – First and last initial of the employee who made the entry. Hover over for full name.
4. **Kiln** – Indicates which kilns the sample came from (there is no kiln 3, only 1, 2, 4, 5, 6, 7).
5. **Silo** – Designates which of the Silos where the product is headed for storage.
6. **Sulfur** – Measurement of the Sulfur value from the specific test.
7. **CO2** – Measurement of the CO2 value from the specific test.
8. **Reactivity** – Tests how reactive the sample is with water. Done on every other North Kilns run. The number is the change in temperature in degrees Celsius.
9. **Surface Area** – Only tested on lime for Manistee production to ensure it is Manistee grade lime.
10. **Comments** – For noting testing outside of the norm, such as splits, resamples, EPA, etc.
11. **Delete / Trash** – Remove a saved lab entry from the entry log.
12. **New Entry** – Create a new entry to log lab results.
13. **Save Changes** – Saves all the information that has been imputed.
14. **Cancel Changes** – Cancels and prevents the unsaved inputs from being saved.
15. **Download** – Download the entirety of the saved data to an Excel file.
16. **Generate** – Updates other tabs and reports in the database when clicked.
17. **Daily Moisture** – Nightly test of measured LOI minus CO2 to get Daily Moisture. Edited here.

Kilns Transaction Data

1. **Silo** – Lists out all the silos in the east and west lime load outs (East 1-9 and West A-F and Q).
2. **Sulfur** – Average of the last four sulfur tests done on the silo's material.
3. **CO2** – Average of the last four CO2 tests done on the silo's material.
4. **LOI** – Sum of the CO2 measurement plus the daily moisture number.
5. **Reactivity** – Test of the sample's reactivity. The number is the change in temperature in degrees Celsius.
6. **SA** – Only tested on lime for Manistee to ensure it is Manistee grade lime for production. Usually, only Silo 9.
7. **Material Type** – Status of the silo (empty or not) and if not, what product is contained. Most silos have a designated type, including pebble, granular, pellets, etc.
8. **Date Empty** – Date the silo was last emptied. No set timeframe for when they are emptied.
9. **Time Empty** – Time the silo was last emptied. No set timeframe for when they are emptied.
10. **Save Changes** – Saves all the information that has been imputed.
18. **Cancel Changes** – Cancels and prevents the unsaved inputs from being saved
19. **Download** – Download the entirety of the page's saved data to an Excel file.

Composite Results

Device composites of two different timed samples.

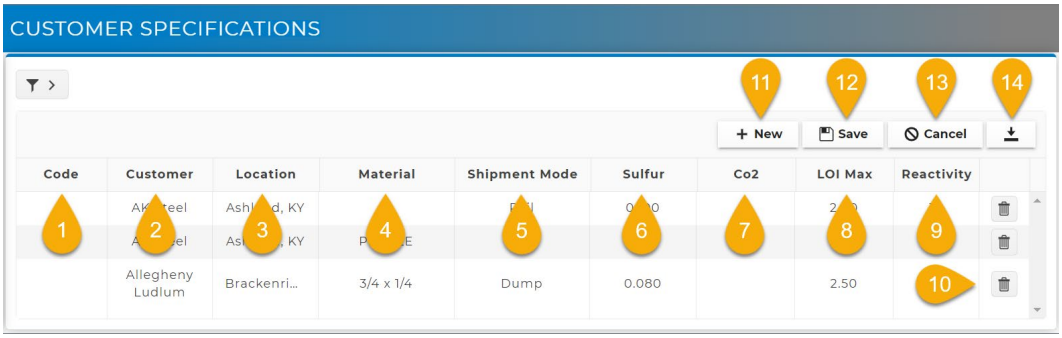


1. **Date** – Calendar date of when the test was done, and the entry was made.
2. **Technician** – First and last initial of the employee who made the entry. Hover over for full name.
3. **Kiln** – Indicates which of the kilns the sample came from. Only kilns 4, 5, 6, and 7 are used here.
4. **Sample** – Indicates in 24-hour time when the two mixed-together samples were pulled.
5. **Loadout** – Which loadout is the product going to West (W) or East (E)
6. **Sizing** – The sizes in the unseparated samples taken directly from the kiln.
7. **% Sulfur** – Percent sulfur in the composite sample.
8. **% CO2** – Percent CO2 in the composite sample.
9. **Reactivity** – Reactivity of the composite sample. Number is temp increase with water in Celsius.
10. **Comment** – Place to enter any pertinent comments. Ex. Only 1300 samples were used, etc.
11. **Delete / Trash** – Remove a saved Composite Result entry from the entry log.
12. **New Entry** – Create a new entry to log composite results.
13. **Save Changes** – Saves all the information that has been imputed.
14. **Cancel Edits** – Cancels and prevents the unsaved inputs from being saved.
15. **Download** – Download the entirety of the saved data to an Excel file.
16. **Generate** – Will update the “Certs” page when clicked.
17. **Daily Moisture** – Nightly test of measured LOI minus CO2 to get Daily Moisture. Edited here.

Customer Specifications

Individual customer specifications for their lime.

Some customers have stricter specifications than others.

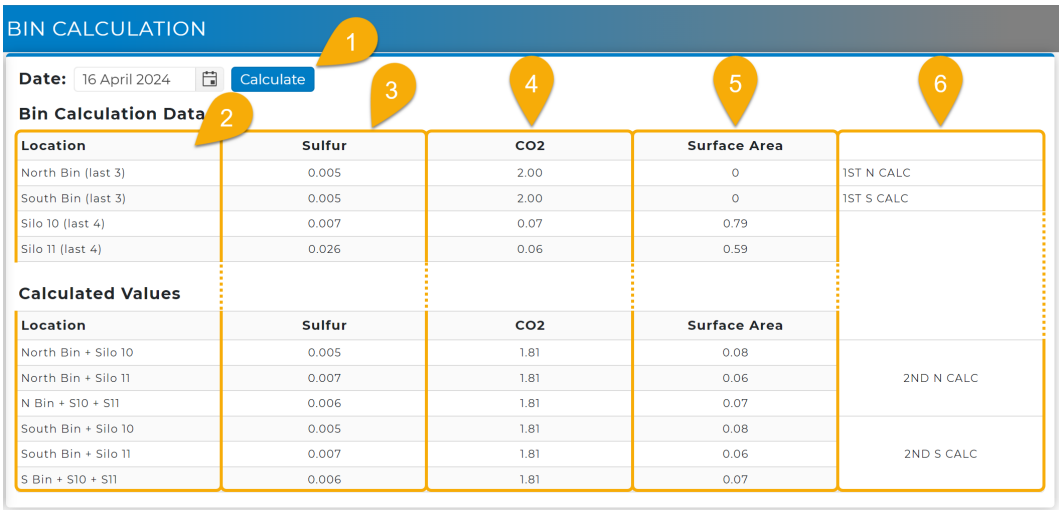


1. **Code** – Letter code designation for each customer.
2. **Customer** – Name of the customer.
3. **Location** – The customer location to have the product shipped to.
4. **Material** – What materials does the client purchase (can be more than one)
5. **Shipment Mode** – What method is used to deliver the product: Dump, Rail, etc.
6. **Sulfur** – Sulfur threshold for the specific customer. Some are stricter than others.
7. **CO2** – CO2 threshold for the specific customer.
8. **LOI Max** – LOI threshold for the specific customer.
9. **Reactivity** – Reactivity threshold for the specific customer.
10. **Delete / Trash** – Remove a customer from the list.
11. **New Entry** – Add a new customer to the customer list.
12. **Save Changes** – Save a new customer that has been imputed.
13. **Cancel Edits** – Cancel new changes before they have been saved.
14. **Download** – Download the entirety of the page's saved data to an Excel file.

Bin Calculations

Daily samples are taken and measured from what is loaded for customers. Averages the last 3 or 4 samples before 7 am, depending on the silo, to devise averages for the Sulfur, CO2, and Surface Area. A representative sample is taken on the day shift from a truck shipment.

NOTE: 10 and 11 are generally extra storage that is worked into the bins over time.



1. **Date** – Click the calendar icon to select a date and click calculate to see that date's results.
2. **Location** – Which silo are the samples coming from, and how many samples are averaged.
3. **Sulfur** – Average amount of sulfur across the 3-4 samples.
4. **CO2** – Average amount of sulfur across the 3-4 samples.
5. **Surface Area** – Average surface area across the 3-4 samples.
6. **Extra Testing** – If multiple samples are taken, specific numbers, indicated here, are used.

Certs

The Certs page is populated from the composite results page. Gives values to the customers requesting the Certificate of Analysis. It is a daily average of the composite testing results.

The Certificates of Analysis are updated in Word with the data from the "Certs" entry page.

ELLO		Sulfur	CO2	C (CO2/3.67)	LOI	R	
CAR	Pebble	0.006	0.06	0.016	0.24*	36	B24 w/o
	Midsize	0.006	0.06	0.016	0.24*	36	B24 w/o
	Granular	0.006	0.06	0.016	0.24	36	
CHS	Midsize	0.006	0.06*	0.016*	0.24	36*	B24 w/o
NSD	Midsize	0.006	0.06	0.016*	0.24*	36*	

WLLO		Sulfur	CO2	C (CO2/3.67)	LOI	R	
CAR	Pebble	0.020	0.30	0.082	0.48*	34	B24 w/o
	Midsize	0.020	0.30	0.082	0.48*	34	B24 w/o
	Granular	0.020	0.30	0.082	0.48	34	
CHS	Midsize	0.020	0.30*	0.082*	0.48	34*	B23 w/
NSD	Midsize	0.020	0.30	0.082*	0.48*	34*	B23 w/o

* - Do not use the values in the gray boxes

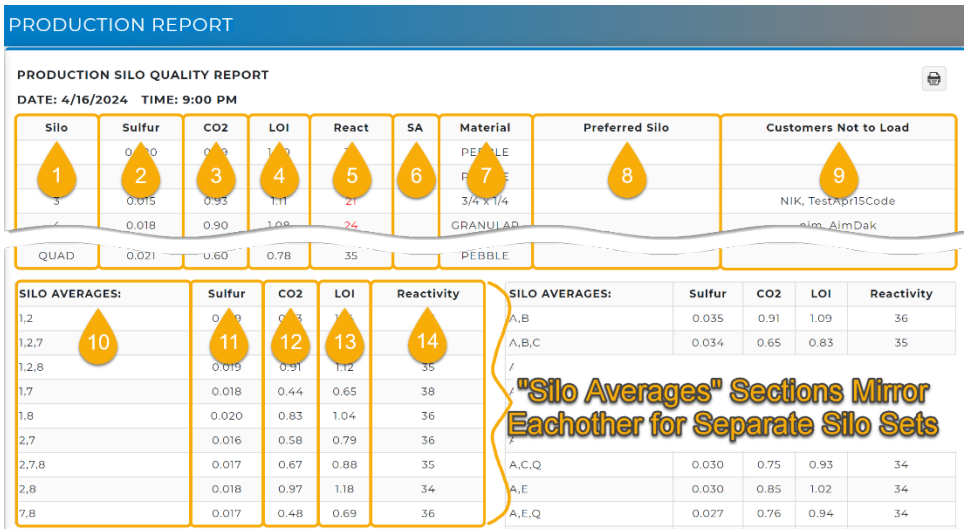
1. **ELLO / WLLO** – East Lime Load Out (ELLO) and West Lime Load Out (WLLO)
   - Column One – Customer code.
   - Column Two – Material Type / Material Size.
2. **Sulfur** – Average of the prior days Sulfur composite results.
3. **CO2** – Average of the prior days CO2 composite results.
4. **C(CO2/3.67)** – Carbon calculation by dividing CO2 calculation by 3.67.
5. **LOI** – The CO2 average plus the daily moisture count.
6. **R** – Number pulled from the reactivity from the composite results.
7. **Screen Setting** – The desired screen setting for the customer.

Reports

Three reports are generated to be distributed to the site loaders and production. The reports include:

- Production Report - Printed and used for Train and Rail shipment information.
- Loader Report - Printed to the loadouts.
- Email Report - Emails to two distribution lists for updates and end-of-shift status.

Production Report



1. **Silo** – Lists out all the silos in the east and west lime load outs (East 1-9 and West A-F and Q).
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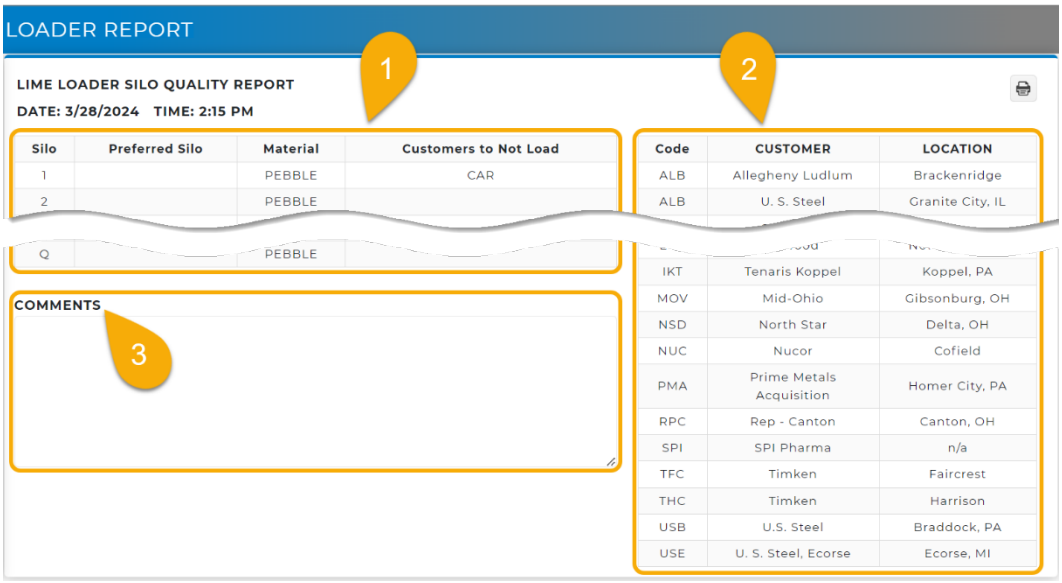
3. **CO2** – Average of the last four CO2 tests done on the silo's material.
4. **LOI** – Sum of the CO2 measurement plus the daily moisture number.
5. **React** – Test of the sample's reactivity. Number is the change in temperature in degrees Celsius.
6. **SA** – Only tested on lime for Manistee to ensure it is Manistee grade lime for production. Usually, only Silo 9.
7. **Material** – Status of the silo (empty or not) and, if not, what product is contained. Most silos have a designated type, including pebble, granular, pellets, etc.
8. **Preferred Silo** – What customers are preferred to load through the designated silo.
9. **Customers Not to Load** – What customers not to load from the designated silo.
10. **Silo Averages** – Lab averages when the product in two or more silos is mixed together.
11. **Sulfur** – Sulfur average between two or more silos products mixed together.
12. **CO2** – CO2 average between two or more silos products mixed together.
13. **LOI** – LOI average between two or more silos products mixed together.
14. **Reactivity** – Reactivity of the sample when two or more silos product is mixed together.

Loader Report



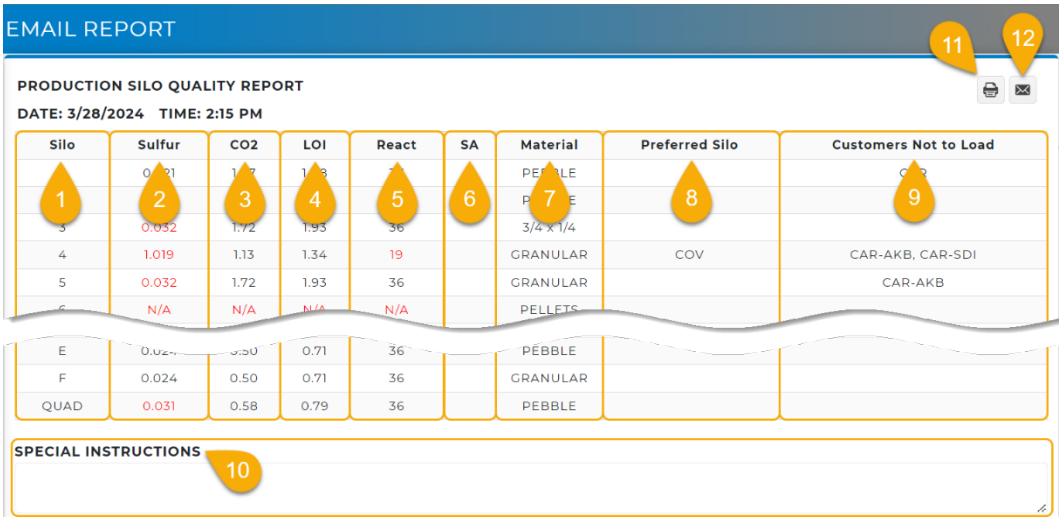
1. **Cluster One**:
   - **Silo** – Lists out all the silos in the east and west lime load outs (East 1-9 and West A-F and Q).
   - **Preferred Silo** – What customers are preferred to load through the designated silo.
   - **Material** – Status of the silo (empty or not) and, if not, what product is contained. Most silos have a designated type, including pebble, granular, pellets, etc.
   - **Customers to Not Load** – What customers not to load from the designated silo.

2. **Cluster Two**:
   - **Code** – Letter code designation for each customer.
   - **Customer** – Name of the customer.
   - **Location** – Where is the customer's location to have the product shipped to

3. **Comments** – Add additional comments for loaders as needed, such as kiln going into silo, etc.

Email Report

Contains a series of high-level information.



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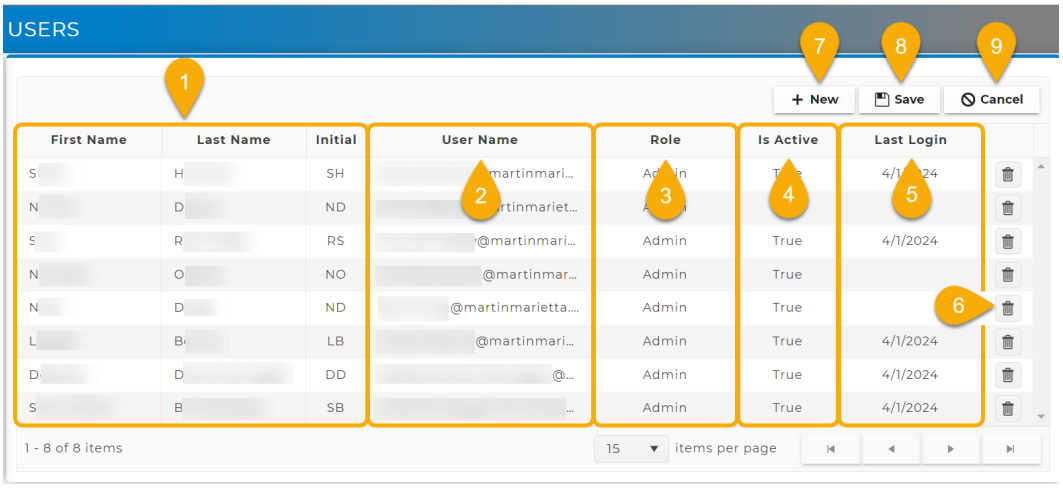
7. **Material** – Status of the silo (empty or not) and, if not, what product is contained. Most silos have a designated type, including pebble, granular, pellets, etc.
8. **Preferred Silo** – What customers are preferred to load through the designated silo.
9. **Customers Not to Load** – What customers not to load from the designated silo.
10. **Special Instructions** – Any special instructions needed for production on pertinent items.
11. **Print** – Print the displayed report or print to save as a PDF.
12. **Email** – Email to one of two distribution lists. The popup allows anyone to be added and to add additional comments before sending.

Admin

Overview of employees' access to the Lime Data application and their role and activity.



1. **Naming** – First and Last name and first and last initial.
2. **Username** – Martin Marietta email address.
3. **Role** – There are three roles: Admin, Operator, and Lab Tech.
4. **Is Active** – Is the user active (True) or inactive (False).
5. **Last Login** – When the user last login to the Lime Data application
6. **Delete / Trash** – Remove a user from the portal.
7. **New Entry** – Add a new user to the portal.
8. **Save Entry** – Save an unsaved new user.
9. **Cancel Edits** – Cancel unsaved changes.

Logout

Log out after adding entries and saving changes to the Lime Data application.

To log out of the application:

1. Locate “Logout” in the navigation panel
2. Click “Logout”
3. Wait for the application to logout

Adding Entries to the Application

The functionality for adding entries is the same across the entirety of the application. To add a new entry in the Lime Data application:

1. Navigate to the desired entry screen
2. Click “New”
3. Enter lab results and other relevant data into the fields
4. Click “Save” to save changes

NOTE: Other functionality includes:

- Cancel the entry to stop and delete additions.
- Delete/trash a saved entry to remove from the log.

Generating an Excel Sheet View of the Data

Users can generate an Excel Sheet view of the content for records on several pages. The pages where users can generate an Excel Sheet include:

- Kilns Data Entry
- Kilns Transaction Data
- Composite Results
- Customer Specifications

To download the Excel Sheet view:

1. Navigate to one of the pages with the download icon
2. Click the download icon represented by a downward-pointing arrow
3. Wait for the download to finish
4. Click the file to view
5. Follow standard save procedures to save the file for records