From: Air.Pollution Control
To: APC Permitting
Subject: FW: Maymead Materials 077502 Permit Modification Request
Date: Wednesday, October 25, 2023 12:29:23 PM
Attachments: Maymead 077502 HP400 Mod Request.pdf

From: Sean Mackey <smackey@maymead.com>
Sent: Wednesday, October 25, 2023 9:54 AM
To: Air.Pollution Control <Air.Pollution.Control@tn.gov>
Cc: Candace Justice <Candace.Justice@tn.gov>
Subject: [EXTERNAL] Maymead Materials 077502 Permit Modification Request

Please see the attached request to replace an existing HP300 (CR4) crusher with a new HP400 (New CR4) crusher. There is no request for production increases or other operating parameters except for the replacement of worn equipment.

If you require additional information, please contact me.

Thank you,

Sean Mackey
Maymead, Inc.
Mobile: 423-571-7159
Office: 423-727-2005

AGGREGATES • AGRICULTURE • ASPHALT

MAYMEAD

October 25, 2023

Technical Secretary
Tennessee Department of Environment and Conservation
Johnson City Environmental Field Office
Division of Air Pollution Control
2305 Silverdale Road
Johnson City, TN 37601-2162

Reference: Permit 077502; Facility ID: 46-0078
Maymead Materials, Inc.
Johnson County

Maymead Materials submits the enclosed permit application forms for equipment changes made at our rock crushing facility located at 720 Prison Camp Road in Mountain City, TN.

The changes are listed below:

1. CR4 HP300 is being replaced with an HP400 (no increase in production requested)

If your office requires any additional information, please let me know and I will get that to you as soon as possible.

Thank you,

Sean Mackey
Project Manager
Corporate Secretary
423-571-7159

Enclosures: APC100, APC109, APC101, Flow, Calc Sheet

State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554

APC 100

NON-TITLE V PERMIT APPLICATION
FACILITY IDENTIFICATION

Please type or print and submit in duplicate for each emission source. Attach appropriate source description forms.

SITE INFORMATION

1. Organization's legal name Maymead Materials, Inc.			For APC use only: APC Company point no.
2. Site name (if different from legal name)			APC Log/Permit no.
3. Site address (St./Rd./Hwy.) 720 Prison Camp Road			County name Johnson
City or distance to nearest town Mountain City		Zip code 37683	**4.** NAICS or SIC code 212313
5. Site location (in lat. /long.)	Latitude 36 26'11.55"N		Longitude 81 46'28.96"W

CONTACT INFORMATION (RESPONSIBLE PERSON)

6. Responsible person/Authorized contact W. B. Roark			Phone number with area code 423-727-2000
Mailing address (St./Rd./Hwy.) 1995 Roan Creek Road			Fax number with area code 423-727-2025
City Mountain City	State TN	Zip code 37683	Email address wbr@maymead.com

CONTACT INFORMATION (TECHNICAL)

7. Principal technical contact Sean Mackey			Phone number with area code 423-571-7159
Mailing address (St./Rd./Hwy.) 1995 Roan Creek Road			Fax number with area code 423-727-2025
City Mountain City	State TN	Zip code 37683	Email address smackey@maymead.com

CONTACT INFORMATION (BILLING)

8. Billing contact Same as 7			Phone number with area code
Mailing address (St./Rd./Hwy.)			Fax number with area code
City	State	Zip code	Email address

EMISSION SOURCE INFORMATION

9. Emission source no. (number which uniquely identifies this source)
46-0078-01

10. Brief description of emission source
Rock Quarry/Crushing Operations

11. Normal operation:	Hours/Day 10	Days/Week 5	Weeks/Year 48	Days/Year 240
12. Percent annual throughput	Dec. – Feb. 5	March – May 30	June – August 35	Sept. – Nov. 30

(Over)

TYPE OF PERMIT REQUESTED

13. Operating permit ( )	Date construction started	Date completed	Last permit no.	Emission source reference number

Construction permit (X)	Last permit no.	Emission source reference number
	077502	46-0078-01

If you choose Construction permit, then choose either New Construction, Modification, or Location transfer

	New Construction ( )	Starting date	Completion date
	Modification (X)	Date modification started or will start: December 2023	Date completed or will complete: January 2024
	Location transfer ( )	Transfer date	Address of last location

14. Describe changes that have been made to this equipment or operation since the last construction or operating permit application:

CR2 1560 Omni Cone replaced with HP500

SIGNATURE

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application and any attached application(s) is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

15. **Signature** (application must be signed before it will be processed)		**Date**
W.B. Roark PRESIDENT		10-25-2023
Signer's name (type of print)	**Title**	**Phone number with area code**
W.B. Roark	President	423-727-2000

Table of Pollution Reduction Device or Method Codes

Note: For cyclones, settling chambers, wet scrubbers, and electrostatic precipitators; the efficiency ranges correspond to the following percentages:
High: 95-99+%. Medium: 80-95% And Low: Less than 80%.
If the system has several pieces of connected control equipment, indicate the sequence. For example: 008'010.97%
If none of the below codes fit, use 999 as a code for other and specify in the comments.

No Equipment....000
Activated Carbon Adsorption....048
Afterburner – Direct Flame....021
Afterburner – Direct Flame with Heat Exchanger....022
Afterburner – Catalytic....019
Afterburner – Catalytic with Heat Exchanger....020
Alkalized Alumina....040
Catalytic Oxidation – Flue Gas Desulfurization....039
Cyclone – High Efficiency....007
Cyclone – Medium Efficiency....008
Cyclone – Low Efficiency....009
Dust Suppression by Chemical Stabilizers or Wetting Agents....062
Electrostatic Precipitator – High Efficiency....010
Electrostatic Precipitator – Medium Efficiency....011
Electrostatic Precipitator – Low Efficiency....012
Fabric Filter – High Temperature....016
Fabric Filter – Medium Temperature....017
Fabric Filter – Low Temperature....018
Fabric Filter – Metal Screens (Cotton Gins)....059
Flaring....023
Gas Adsorption Column -- Packed....050
Gas Adsorption Column – Tray Type....051
Gas Scrubber (General: Not Classified)....013
Limestone Injection – Dry....041
Limestone Injection – Wet....042
Liquid Filtration System....049
Mist Eliminator – High Velocity....014
Mist Eliminator – Low Velocity....015
Process Change....046
Process Enclosed....054
Process Gas Recovery....060
Settling Chamber – High Efficiency....004
Settling Chamber – Medium Efficiency....005
Settling Chamber – Low Efficiency....006
Spray Tower (Gaseous Control Only)....052
Sulfuric Acid Plant – Contact Process....043
Sulfuric Acid Plant – Double Contact Process....044
Sulfur Plant....045
Vapor Recovery System (Including Condensers, Hooding and Other Enclosures)....047
Venturi Scrubber (Gaseous Control Only)....053
Wet Scrubber – High Efficiency....001
Wet Scrubber – Medium Efficiency....002
Wet Scrubber – Low Efficiency....003
Wet Suppression by Water Sprays....061

Table of Emission Estimation Method Codes

Not application / Emissions are known to be zero....0
Emissions based on source testing....1
Emissions based on material balance using engineering expertise and knowledge of process....2
Emissions calculated using emission factors from EPA publications No. AP-42 Compilation of Air Pollution Emissions Factors....3
Judgment....4
Emissions calculated using a special emission factor different from that in AP-42....5
Other (Specify in comments)....6

State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554

NON-TITLE V PERMIT APPLICATION
EMISSION POINT DESCRIPTION

Please type or print and submit in duplicate for each stack or emission source. Attach to the Non-Title V Facility Identification Form (APC 100).

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization name Maymead Materilas, Inc.		For APC use only	APC Company point no.
2. Emission source no. (As on Non-Title V Facility Identification Form) 46-0078-01	Flow diagram point number CR4 (21)		APC Log/Permit no.
3. Brief emission point description (Attach a sketch if appropriate): Secondary Crushing			Distance to nearest property line (Ft.) 450'

STACK AND EMISSION DATA

4. Stack or emission point data: →	Height above grade (Ft.) 6'1"	Diameter (Ft.)	Temperature (°F) NA	% of time over 125°F 0%	Direction of exit (Up, down or horizontal) Down
Data at exit conditions: →	Flow (actual $Ft.^3$/Min.)	Velocity (Ft. /Sec.)	Moisture (Grains/$Ft.^3$)		Moisture (Percent) 6%
Data at standard conditions: →	Flow (Dry std. $Ft.^3$/Min.)	Velocity (Ft. /Sec.)	Moisture (Grains/$Ft.^3$)		Moisture (Percent) 6%

5. Air contaminants	Actual emissions						
	Emissions (Lbs./Hr.)						
	Average	Maximum	Concentration	Avg. emissions (Tons/Yr.)	Emissions est. method code	Control devices *	Control efficiency%
Particulate matter	2.9	5.1	**	2.9	3 calculated	none	0%
Sulfur dioxide (SO_2)			***				
Carbon monoxide (CO)			PPM				
Organic compounds			PPM				
Nitrogen oxides (NO_X)			PPM				
Fluorides							
Greenhouse gases (CO_2 equivalents)							
Hazardous air pollutant (specify)							
Hazardous air pollutant (specify)							
Other (specify)							
Other (specify)							
Other (specify)							

(Over)

6. Check types of monitoring and recording instruments that are attached: Opacity monitor ( ), SO_2 monitor ( ), NO_X monitor ( ), Other (specify in comments) ( )	
7. Comments Visual Observations	
8. Control device or Method code description:	Description of operating parameters of device (flow rate, temperature, pressure drop, etc.):

* Refer to the tables below for estimation method and control device codes.

** Exit gas particulate matter concentration units: Process – Grains/Dry Standard Ft^3 (70^0F), Wood fired boilers - Grains/Dry Standard Ft^3 (70^0F), all other boilers – Lbs. /Million BTU heat input.

*** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million BTU heat input

Table of Pollution Reduction Device or Method Codes
(Alphabetical listing)

Note: For cyclones, settling chambers, wet scrubbers, and electrostatic precipitators; the efficiency ranges correspond to the following percentages:
High: 95-99+%. Medium: 80-95% And Low: Less than 80%.
If the system has several pieces of connected control equipment, indicate the sequence. For example: 008'010.97%
If none of the below codes fit, use 999 as a code for other and specify in the comments.

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Catalytic Oxidation – Flue Gas Desulfurization....039
Cyclone – High Efficiency....007
Cyclone – Medium Efficiency....008
Cyclone – Low Efficiency....009
Dust Suppression by Chemical Stabilizers or Wetting Agents 062
Electrostatic Precipitator – High Efficiency....010
Electrostatic Precipitator – Medium Efficiency....011
Electrostatic Precipitator – Low Efficiency....012
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Fabric Filter – Low Temperature....018
Fabric Filter – Metal Screens (Cotton Gins)....059
Flaring....023
Gas Adsorption Column -- Packed....050
Gas Adsorption Column – Tray Type....051
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Settling Chamber – Low Efficiency....006
Spray Tower (Gaseous Control Only)....052
Sulfuric Acid Plant – Contact Process....043
Sulfuric Acid Plant – Double Contact Process....044
Sulfur Plant....045
Vapor Recovery System (Including Condensers, Hooding and Other Enclosures)....047
Venturi Scrubber (Gaseous Control Only)....053
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Wet Scrubber – Low Efficiency....003
Wet Suppression by Water Sprays....061

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Department of Environment and Conservation
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William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554

NON-TITLE V PERMIT APPLICATION
ROCK CRUSHING SOURCE DESCRIPTION

Please type or print and submit in duplicate. Attach to the Non-Title V Facility Identification Form (APC 100).

GENERAL IDENTIFICATION AND DESCRIPTION

1. **Organization name**	For APC use only	APC Company – Point no.
Maymead Materials, Inc.		
2. **Emission source no.** (As on Non-Title V Facility Identification Form)		APC Log/Permit no.
46-0078-01		

EQUIPMENT INFORMATION

The applicant must submit an equipment list and flow diagram. The applicant may use the table below to list the equipment or attach a separate sheet of paper for the equipment list. The equipment list must include each crusher, screen, conveyor, bin, pugmill, feeder, agricultural lime, etc. The flow diagram must show each piece of equipment labeled with a reference number.

3. Equipment type (see Note 1)	Flow diagram reference number (See Note 2)	Size (See Note 3)	Operating rate (Tons/Hr.) Design	Operating rate (Tons/Hr.) Actual	Date of manufacture
Crusher HP400 Cone	CR4	400	520	520	2023
This is a replacement					

Note 1: Equipment type: The applicant must list each crusher, screen, conveyor, bin, pugmill, feeder, agricultural lime, etc.
Note 2: Flow diagram reference number: The applicant must attach a flow diagram. The flow diagram must show each piece of equipment, including each crusher, screen, conveyor, bin, pugmill, feeder, agricultural lime, etc. Each piece of equipment must be labeled with a reference number.
Note 3: Size: For crushers, size is the design operating rate (in ton/hr.). For screens, size is the dimensions of the top deck of the screen. For conveyors, size is the width of the conveyor. For bins, size is the design capacity in tons.

(Over)

ROAD INFORMATION				
4. Roads:	Paved (Miles of road)	Unpaved (Miles of road)	Watered (Miles & frequency)	Other control (specify)
Plant yard				
Access roads				

STOCKPILE INFORMATION							
5. Stockpiles:	Estimated annual tons	Turnover rate (Tons/Month)	Wetted as piled	No. of sides enclosed	Other dust control (See Note 4)	Loading method (e.g. loader, conveyor) Load in	Load out
Coarse: Over 1"	250,000	20,800	No	None	None	Truck	Truck
Fine: 1" to 1/4"							
1/4" and less							
MFG. Sand							
Other (specify)							

EMISSION INFORMATION							
6. Particulate emission data:	Flow diagram ref. number (See Note 5)	Average emissions (Lbs./Hr.)	Maximum emissions (Lbs./Hr.)	Average emissions (Tons/Year)	Emissions est. method (See Note 6)	Control devices (Note 6)	Control efficiency (%)
Primary crushing							
Secondary crushing	CR2 & CR3	2.45	2.45	2.4	Calculated	None	0
Tertiary crushing							
Agricultural lime							
Open storage							
Enclosed storage							
Conveying & Transferring							
Loading out							
Traffic dust							
Other (specify)							
Totals							

7. Comments

Note 4: Explain in comments, if necessary.
Note 5: As identified on the flow diagram required in item #3
Note 6: Refer to the back of the Non-Title V Facility Identification Form (APC 100) for estimation method and control device codes.

STONE CRUSHING EMISSIONS CALCULATOR REVISION C 05/23/2011 **EMISSIONS**

INVENTORY INPUT SCREEN

NCDENR

NOTICE:

This spreadsheet is for your use only and should be used with caution. DENR does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. DENR is not responsible for errors or omissions that may be contained herein.

Instructions:

1. Use this sheet for EMISSION INVENTORY PURPOSES ONLY.
2. For each product fill in all BLUE cells.

Company Name:	Maymead, Inc
Facility ID No.:	46-0001-01
Permit No.:	77502
Facility City:	Mountain City
Facility County:	Johnson
Spreadsheet Prepared by:	Sean Mackey

Actual plant hours of operation:	1920	hours
How many products did you produce ?	1	

Facility-wide Emissions Summary

yearly actual TSP emissions (tpy)	yearly actual PM_{10} emissions (tpy)	yearly actual PM2.5 emissions (tpy)	yearly potential TSP emissions (tpy)	yearly potential PM_{10} emissions (tpy)	yearly potential PM2.5 emissions (tpy)
7.0	2.9	2.2	31.8	13.1	10.1

Product	Crushed Stone

Product Crushed Stone Process Information

Actual annual production of Crushed Stone: 900,000 tons

CRUSHERS Information

No. of primary crushers with no suppression:	0
No. of primary crushers with wet suppression:	0
No. of secondary / tertiary crushers with no suppression:	2
No. of secondary / tertiary crushers with wet suppression:	0
No. of fines crushers with no suppression:	0
No. of fines crushers with wet suppression:	0

SCREENS Information

No. of normal screens with no suppression:	0
No. of normal screens with wet suppression:	2
No. of fines screens with no suppression:	0
No. of fines screens with wet suppression:	0

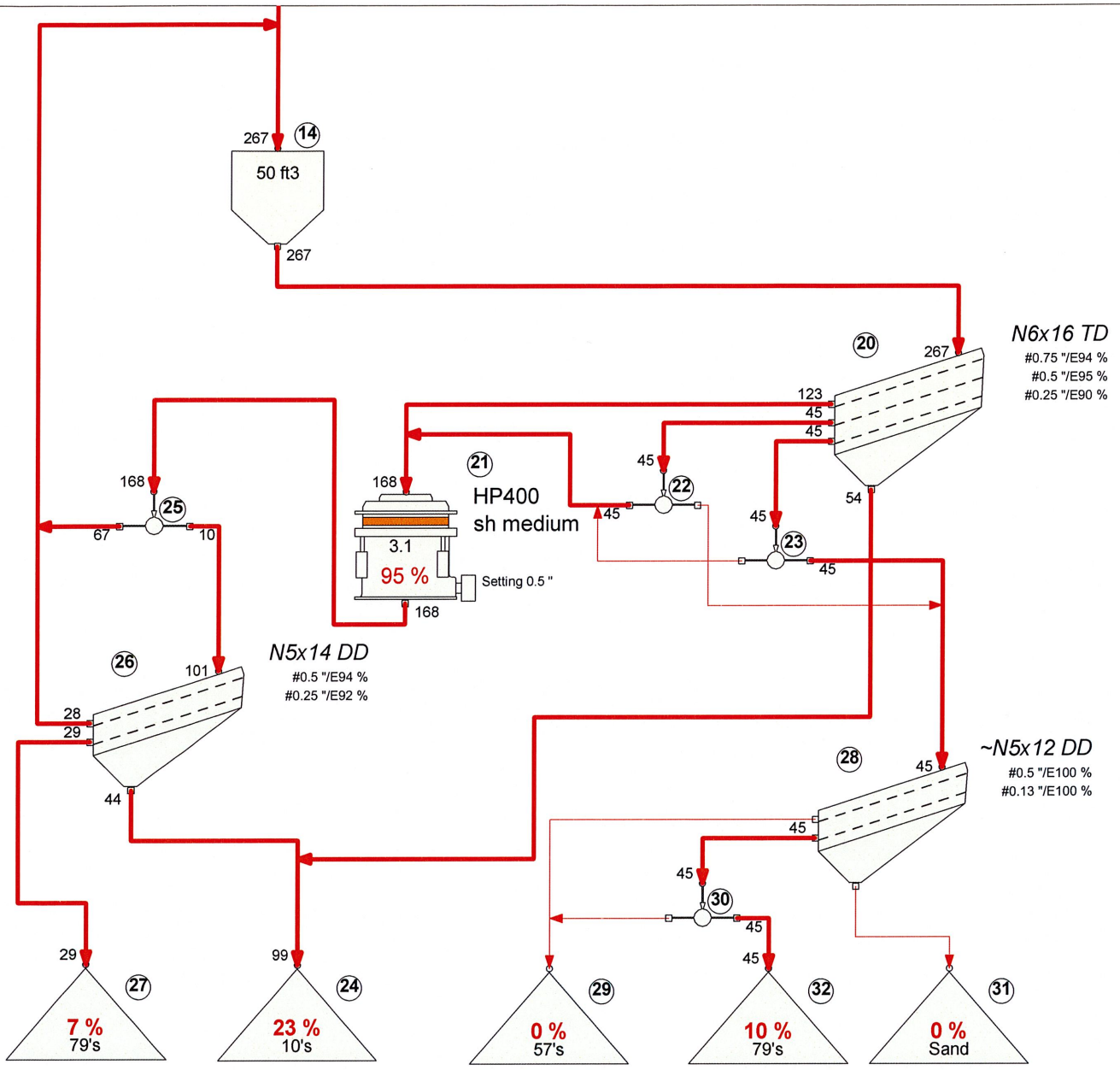
CONVEYOR TRANSFER POINTS Information

*No. of conveyor transport points with no suppression:	0
*No. of conveyor transport points with wet suppression:	2

*NOTE: Each conveyor will have only one transfer point, the point where a conveyor drops product, not recieves product. Do not include conveyors that drop to screens or crushers. The transfer points to the crushers and screens are already accounted for in the emission factors for these units.

Product Crushed Stone Emissions Summary

Crushed Stone product crushers TSP emissions:	4.9	tons
Crushed Stone product screens TSP emissions:	2.0	tons
Crushed Stone product conveyor transfer points TSP emissions:	0.1	tons
Crushed Stone product total TSP emissions:	7.0	tons
Crushed Stone product crushers PM10 emissions:	2.2	tons
Crushed Stone product screens PM10 emissions:	0.7	tons
Crushed Stone product conveyor transfer points PM10 emissions:	0.0	tons
Crushed Stone product total PM10 emissions:	2.9	tons
Crushed Stone product crushers PM2.5 emissions:	2.2	tons
Crushed Stone product screens PM2.5 emissions:	0.0	tons
Crushed Stone product conveyor transfer points PM2.5 emissions:	0.0	tons
Crushed Stone product total PM2.5 emissions:	2.2	tons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14
50 ft3
267
20
267
N6x16 TD
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#0.5 "/E95 %
#0.25 "/E90 %
123
45
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67
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HP400
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168
N5x14 DD
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26
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#0.13 "/E100 %
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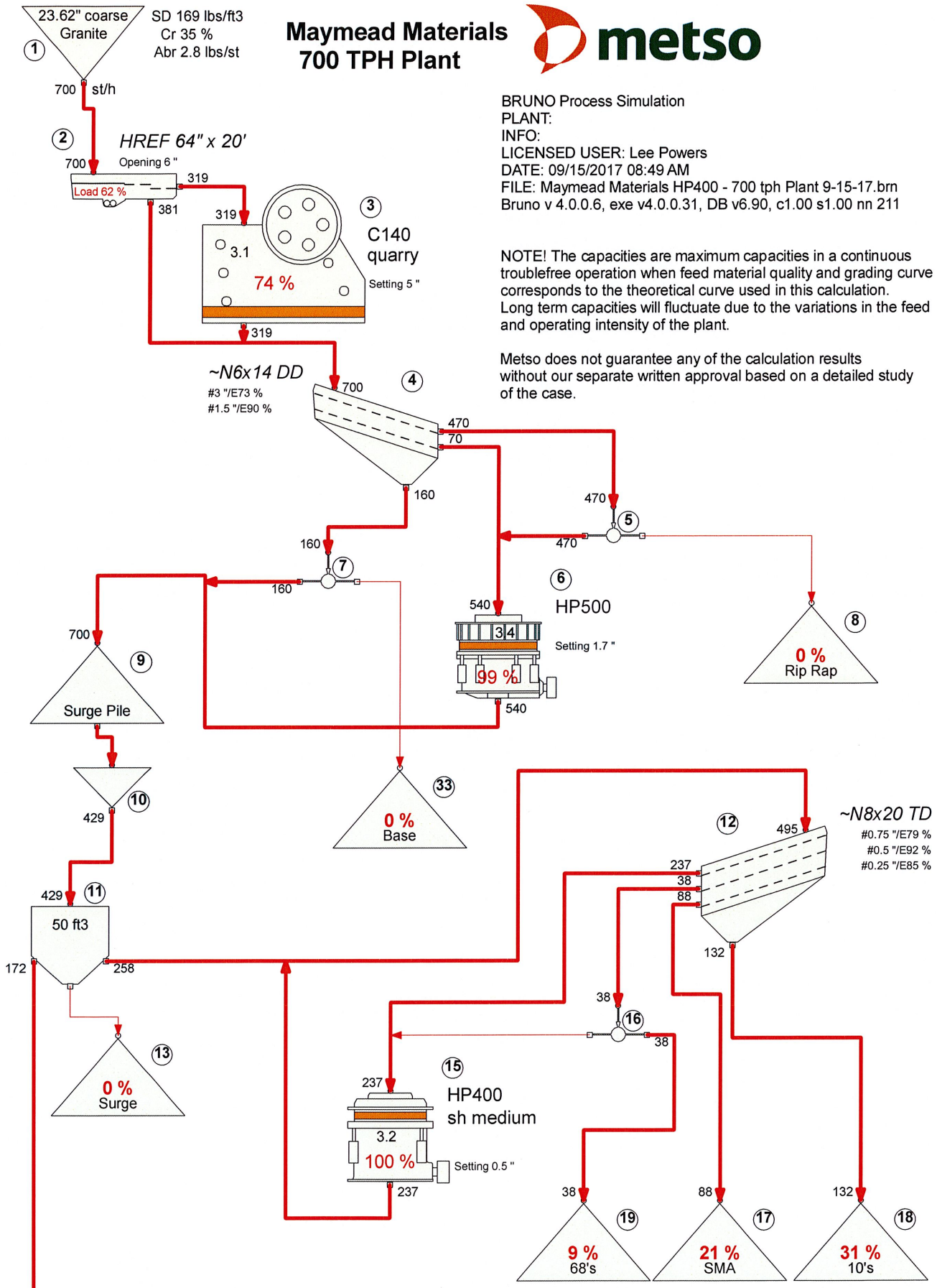
7 %
79's
99
24
23 %
10's
29
0 %
57's
32
10 %
79's
31
0 %
Sand



Maymead Materials
700 TPH Plant

BRUNO Process Simulation
PLANT:
INFO:
LICENSED USER: Lee Powers
DATE: 09/15/2017 08:49 AM
FILE: Maymead Materials HP400 - 700 tph Plant 9-15-17.brn
Bruno v 4.0.0.6, exe v4.0.0.31, DB v6.90, c1.00 s1.00 nn 211

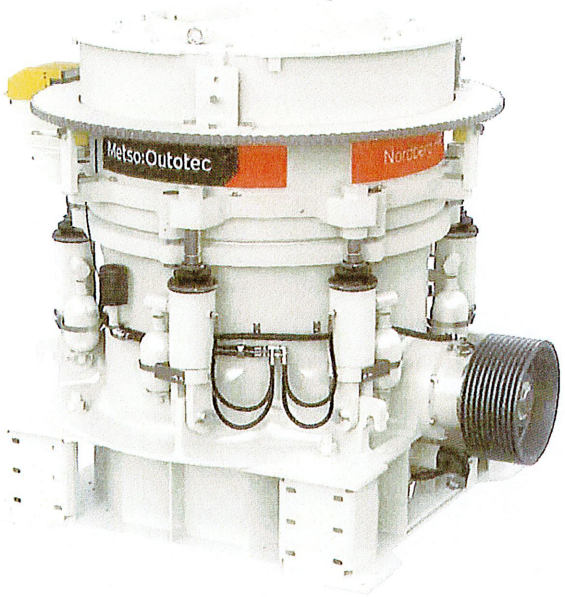
NOTE! The capacities are maximum capacities in a continuous troublefree operation when feed material quality and grading curve corresponds to the theoretical curve used in this calculation. Long term capacities will fluctuate due to the variations in the feed and operating intensity of the plant.

Metso does not guarantee any of the calculation results without our separate written approval based on a detailed study of the case.

Nordberg HP400 cone crusher

HP (High Performance) Series cone crushers feature a unique combination of crusher speed, throw, and cavity design. This combination has proved revolutionary in providing higher capacity and superior product quality, and in providing a wider range of application suitability.

From limestone to taconite, from ballast production to manufactured sand, and from small portable plants, HP cone crushers provide unbeatable performance in secondary, tertiary, and quaternary applications.



Basic Data	Metric	Imperial
Max feed size (1)	Up to 304 mm	11.97 in
Max installed power	315 kW	400 hp
Stroke	95 mm	3.74 in
Crusher weight (2)	23 000 kg	50 600 lbs
Counter shaft speed	750-1050 tr/mn	750-1050 rpm

(1) With standard coarse equipment
(2) Without sub frame, motor, belt guard and feed extension, with the heaviest mantle and bowl liner