

|                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Form 5500</b><br><br>Department of the Treasury<br>Internal Revenue Service<br><br>Department of Labor<br>Employee Benefits Security<br>Administration<br><br>Pension Benefit Guaranty Corporation | <b>Annual Return/Report of Employee Benefit Plan</b><br>This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code).<br><br><p style="text-align: center;">▶ <b>Complete all entries in accordance with the instructions to the Form 5500.</b></p> | OMB Nos. 1210-0110<br>1210-0089<br><br><b>2018</b><br><br><b>This Form is Open to Public Inspection</b> |
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|                                                                            |                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Part I</b>                                                              | <b>Annual Report Identification Information</b><br>For calendar plan year 2018 or fiscal plan year beginning <u>01/01/2018</u> and ending <u>12/31/2018</u>                                                                                                                                                                               |
| <b>A</b> This return/report is for:                                        | <input type="checkbox"/> a multiemployer plan <input type="checkbox"/> a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.)<br><input checked="" type="checkbox"/> a single-employer plan <input type="checkbox"/> a DFE (specify) ____ |
| <b>B</b> This return/report is:                                            | <input type="checkbox"/> the first return/report <input type="checkbox"/> the final return/report<br><input type="checkbox"/> an amended return/report <input type="checkbox"/> a short plan year return/report (less than 12 months)                                                                                                     |
| <b>C</b> If the plan is a collectively-bargained plan, check here. . . . . | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                       |
| <b>D</b> Check box if filing under:                                        | <input checked="" type="checkbox"/> Form 5558 <input type="checkbox"/> automatic extension <input type="checkbox"/> the DFVC program<br><input type="checkbox"/> special extension (enter description)                                                                                                                                    |

|                                                                                                                                                                                                                                                                                                                                                                 |                                                               |                                                                     |                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------|
| <b>Part II</b>                                                                                                                                                                                                                                                                                                                                                  | <b>Basic Plan Information—enter all requested information</b> |                                                                     |                                                                  |
| <b>1a</b> Name of plan<br><u>FERRO CORPORATION 401(K) PLAN</u>                                                                                                                                                                                                                                                                                                  | <b>1b</b> Three-digit plan number (PN) ▶                      | <u>031</u>                                                          |                                                                  |
| <b>2a</b> Plan sponsor's name (employer, if for a single-employer plan)<br>Mailing address (include room, apt., suite no. and street, or P.O. Box)<br>City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions)<br><u>FERRO CORPORATION</u><br><br><u>6060 PARKLAND BLVD</u><br><u>MAYFIELD HEIGHTS, OH 44124</u> | <b>1c</b> Effective date of plan<br><u>01/01/1984</u>         | <b>2b</b> Employer Identification Number (EIN)<br><u>34-0217820</u> | <b>2c</b> Plan Sponsor's telephone number<br><u>216-875-5600</u> |
|                                                                                                                                                                                                                                                                                                                                                                 |                                                               | <b>2d</b> Business code (see instructions)<br><u>327900</u>         |                                                                  |

**Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.**

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

|                  |                                                   |                   |                                                              |
|------------------|---------------------------------------------------|-------------------|--------------------------------------------------------------|
| <b>SIGN HERE</b> | Filed with authorized/valid electronic signature. | <u>09/19/2019</u> | <u>ERICA REGAN</u>                                           |
|                  | Signature of plan administrator                   | Date              | Enter name of individual signing as plan administrator       |
| <b>SIGN HERE</b> |                                                   |                   |                                                              |
|                  | Signature of employer/plan sponsor                | Date              | Enter name of individual signing as employer or plan sponsor |
| <b>SIGN HERE</b> |                                                   |                   |                                                              |
|                  | Signature of DFE                                  | Date              | Enter name of individual signing as DFE                      |

For Paperwork Reduction Act Notice, see the Instructions for Form 5500.

Form 5500 (2018)  
v. 171027

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3a</b> Plan administrator's name and address <input checked="" type="checkbox"/> Same as Plan Sponsor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>3b</b> Administrator's EIN<br><br><b>3c</b> Administrator's telephone number<br><br><div style="background-color: #cccccc; height: 40px; width: 100%;"></div>                                                                                                                                                                     |
| <b>4</b> If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report:<br><b>a</b> Sponsor's name<br><b>c</b> Plan Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>4b</b> EIN<br><br><b>4d</b> PN                                                                                                                                                                                                                                                                                                    |
| <b>5</b> Total number of participants at the beginning of the plan year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>5</b> 1287                                                                                                                                                                                                                                                                                                                        |
| <b>6</b> Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines <b>6a(1)</b> , <b>6a(2)</b> , <b>6b</b> , <b>6c</b> , and <b>6d</b> ).<br><br><b>a(1)</b> Total number of active participants at the beginning of the plan year .....<br><b>a(2)</b> Total number of active participants at the end of the plan year .....<br><br><b>b</b> Retired or separated participants receiving benefits.....<br><b>c</b> Other retired or separated participants entitled to future benefits .....<br><b>d</b> Subtotal. Add lines <b>6a(2)</b> , <b>6b</b> , and <b>6c</b> .....<br><b>e</b> Deceased participants whose beneficiaries are receiving or are entitled to receive benefits. ....<br><b>f</b> Total. Add lines <b>6d</b> and <b>6e</b> .....<br><br><b>g</b> Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item) .....<br><br><b>h</b> Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested ..... | <b>6a(1)</b> 774<br><b>6a(2)</b> 759<br><b>6b</b> 21<br><b>6c</b> 453<br><b>6d</b> 1233<br><b>6e</b> 9<br><b>6f</b> 1242<br><b>6g</b> 1204<br><b>6h</b> 14                                                                                                                                                                           |
| <b>7</b> Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item) .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>7</b>                                                                                                                                                                                                                                                                                                                             |
| <b>8a</b> If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions:<br>2A 2E 2F 2G 2J 2K 2O 2T<br><br><b>b</b> If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                      |
| <b>9a</b> Plan funding arrangement (check all that apply)<br><b>(1)</b> <input checked="" type="checkbox"/> Insurance<br><b>(2)</b> <input type="checkbox"/> Code section 412(e)(3) insurance contracts<br><b>(3)</b> <input checked="" type="checkbox"/> Trust<br><b>(4)</b> <input type="checkbox"/> General assets of the sponsor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>9b</b> Plan benefit arrangement (check all that apply)<br><b>(1)</b> <input checked="" type="checkbox"/> Insurance<br><b>(2)</b> <input type="checkbox"/> Code section 412(e)(3) insurance contracts<br><b>(3)</b> <input checked="" type="checkbox"/> Trust<br><b>(4)</b> <input type="checkbox"/> General assets of the sponsor |

**10** Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)

**a Pension Schedules**

- (1)** ☒ **R** (Retirement Plan Information)
- (2)** ☐ **MB** (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary
- (3)** ☐ **SB** (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary

**b General Schedules**

- (1)** ☒ **H** (Financial Information)
- (2)** ☐ **I** (Financial Information – Small Plan)
- (3)** ☒ 1 **A** (Insurance Information)
- (4)** ☒ **C** (Service Provider Information)
- (5)** ☒ **D** (DFE/Participating Plan Information)
- (6)** ☐ **G** (Financial Transaction Schedules)

**Part III Form M-1 Compliance Information (to be completed by welfare benefit plans)**

**11a** If the plan provides welfare benefits, was the plan subject to the Form M-1 filing requirements during the plan year? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

If "Yes" is checked, complete lines 11b and 11c.

**11b** Is the plan currently in compliance with the Form M-1 filing requirements? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

**11c** Enter the Receipt Confirmation Code for the 2018 Form M-1 annual report. If the plan was not required to file the 2018 Form M-1 annual report, enter the Receipt Confirmation Code for the most recent Form M-1 that was required to be filed under the Form M-1 filing requirements. (Failure to enter a valid Receipt Confirmation Code will subject the Form 5500 filing to rejection as incomplete.)

Receipt Confirmation Code \_\_\_\_\_

|                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                           |                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>SCHEDULE A</b><br><b>(Form 5500)</b><br><br>Department of the Treasury<br>Internal Revenue Service<br><br>Department of Labor<br>Employee Benefits Security Administration<br><br>Pension Benefit Guaranty Corporation | <b>Insurance Information</b><br><br>This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).<br><br>▶ <b>File as an attachment to Form 5500.</b><br><br>▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2). | OMB No. 1210-0110<br><br><b>2018</b><br><br><b>This Form is Open to Public Inspection</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

|                                                                                            |                                                             |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018 |                                                             |
| <b>A</b> Name of plan<br>FERRO CORPORATION 401(K) PLAN                                     | <b>B</b> Three-digit plan number (PN) ▶ 031                 |
| <b>C</b> Plan sponsor's name as shown on line 2a of Form 5500<br>FERRO CORPORATION         | <b>D</b> Employer Identification Number (EIN)<br>34-0217820 |

|               |                                                                                                                                                                                                                                                     |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Part I</b> | <b>Information Concerning Insurance Contract Coverage, Fees, and Commissions</b> Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A. |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                |
|--------------------------------|
| <b>1</b> Coverage Information: |
|--------------------------------|

|                                                                          |
|--------------------------------------------------------------------------|
| <b>(a)</b> Name of insurance carrier<br>PRINCIPAL LIFE INSURANCE COMPANY |
|--------------------------------------------------------------------------|

| (b) EIN    | (c) NAIC code | (d) Contract or identification number | (e) Approximate number of persons covered at end of policy or contract year | Policy or contract year |            |
|------------|---------------|---------------------------------------|-----------------------------------------------------------------------------|-------------------------|------------|
|            |               |                                       |                                                                             | (f) From                | (g) To     |
| 42-0127290 | 61271         | 628100                                | 0                                                                           | 12/20/2018              | 12/31/2018 |

|                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2</b> Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                             |                                      |
|---------------------------------------------|--------------------------------------|
| <b>(a)</b> Total amount of commissions paid | <b>(b)</b> Total amount of fees paid |
|                                             |                                      |

|                                                                                                              |
|--------------------------------------------------------------------------------------------------------------|
| <b>3</b> Persons receiving commissions and fees. (Complete as many entries as needed to report all persons). |
|--------------------------------------------------------------------------------------------------------------|

|                                                                                                         |
|---------------------------------------------------------------------------------------------------------|
| <b>(a)</b> Name and address of the agent, broker, or other person to whom commissions or fees were paid |
|---------------------------------------------------------------------------------------------------------|

| (b) Amount of sales and base commissions paid | Fees and other commissions paid |             | (e) Organization code |
|-----------------------------------------------|---------------------------------|-------------|-----------------------|
|                                               | (c) Amount                      | (d) Purpose |                       |
|                                               |                                 |             |                       |

|                                                                                                         |
|---------------------------------------------------------------------------------------------------------|
| <b>(a)</b> Name and address of the agent, broker, or other person to whom commissions or fees were paid |
|---------------------------------------------------------------------------------------------------------|

| (b) Amount of sales and base commissions paid | Fees and other commissions paid |             | (e) Organization code |
|-----------------------------------------------|---------------------------------|-------------|-----------------------|
|                                               | (c) Amount                      | (d) Purpose |                       |
|                                               |                                 |             |                       |

---

**(a)** Name and address of the agent, broker, or other person to whom commissions or fees were paid

---

| <b>(b)</b> Amount of sales and base commissions paid | Fees and other commissions paid |                    | <b>(e)</b><br>Organization code |
|------------------------------------------------------|---------------------------------|--------------------|---------------------------------|
|                                                      | <b>(c)</b> Amount               | <b>(d)</b> Purpose |                                 |
|                                                      |                                 |                    |                                 |

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**(a)** Name and address of the agent, broker, or other person to whom commissions or fees were paid

---

| <b>(b)</b> Amount of sales and base commissions paid | Fees and other commissions paid |                    | <b>(e)</b><br>Organization code |
|------------------------------------------------------|---------------------------------|--------------------|---------------------------------|
|                                                      | <b>(c)</b> Amount               | <b>(d)</b> Purpose |                                 |
|                                                      |                                 |                    |                                 |

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**(a)** Name and address of the agent, broker, or other person to whom commissions or fees were paid

---

| <b>(b)</b> Amount of sales and base commissions paid | Fees and other commissions paid |                    | <b>(e)</b><br>Organization code |
|------------------------------------------------------|---------------------------------|--------------------|---------------------------------|
|                                                      | <b>(c)</b> Amount               | <b>(d)</b> Purpose |                                 |
|                                                      |                                 |                    |                                 |

---

**(a)** Name and address of the agent, broker, or other person to whom commissions or fees were paid

---

| <b>(b)</b> Amount of sales and base commissions paid | Fees and other commissions paid |                    | <b>(e)</b><br>Organization code |
|------------------------------------------------------|---------------------------------|--------------------|---------------------------------|
|                                                      | <b>(c)</b> Amount               | <b>(d)</b> Purpose |                                 |
|                                                      |                                 |                    |                                 |

---

**(a)** Name and address of the agent, broker, or other person to whom commissions or fees were paid

---

| <b>(b)</b> Amount of sales and base commissions paid | Fees and other commissions paid |                    | <b>(e)</b><br>Organization code |
|------------------------------------------------------|---------------------------------|--------------------|---------------------------------|
|                                                      | <b>(c)</b> Amount               | <b>(d)</b> Purpose |                                 |
|                                                      |                                 |                    |                                 |

**Part II Investment and Annuity Contract Information**

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

|                                                                                                        |          |  |
|--------------------------------------------------------------------------------------------------------|----------|--|
| <b>4</b> Current value of plan's interest under this contract in the general account at year end ..... | <b>4</b> |  |
| <b>5</b> Current value of plan's interest under this contract in separate accounts at year end .....   | <b>5</b> |  |

**6** Contracts With Allocated Funds:**a** State the basis of premium rates ▶

|                                                                                                                                                                                                                |           |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--|
| <b>b</b> Premiums paid to carrier.....                                                                                                                                                                         | <b>6b</b> |  |
| <b>c</b> Premiums due but unpaid at the end of the year.....                                                                                                                                                   | <b>6c</b> |  |
| <b>d</b> If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount. ....<br>Specify nature of costs ▶ | <b>6d</b> |  |

**e** Type of contract: (1) ☐ individual policies (2) ☐ group deferred annuity  
(3) ☐ other (specify) ▶

**f** If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ ☐

**7** Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

**a** Type of contract: (1) ☐ deposit administration (2) ☐ immediate participation guarantee  
(3) ☐ guaranteed investment (4) ☒ other ▶ **GUARANTEED INTEREST CONTRACT**

|                                                                                                         |              |                 |                 |
|---------------------------------------------------------------------------------------------------------|--------------|-----------------|-----------------|
| <b>b</b> Balance at the end of the previous year.....                                                   | <b>7b</b>    |                 | <b>0</b>        |
| <b>c</b> Additions: (1) Contributions deposited during the year .....                                   | <b>7c(1)</b> |                 |                 |
| (2) Dividends and credits .....                                                                         | <b>7c(2)</b> |                 |                 |
| (3) Interest credited during the year .....                                                             | <b>7c(3)</b> | <b>6537</b>     |                 |
| (4) Transferred from separate account.....                                                              | <b>7c(4)</b> |                 |                 |
| (5) Other (specify below) .....                                                                         | <b>7c(5)</b> | <b>13999440</b> |                 |
| ▶ <b>INVESTMENT TRANSFERS</b>                                                                           |              |                 |                 |
| (6) Total additions.....                                                                                | <b>7c(6)</b> |                 | <b>14005977</b> |
| <b>d</b> Total of balance and additions (add lines <b>7b</b> and <b>7c(6)</b> ) .....                   | <b>7d</b>    |                 | <b>14005977</b> |
| <b>e</b> Deductions:                                                                                    |              |                 |                 |
| (1) Disbursed from fund to pay benefits or purchase annuities during year .....                         | <b>7e(1)</b> |                 |                 |
| (2) Administration charge made by carrier .....                                                         | <b>7e(2)</b> |                 |                 |
| (3) Transferred to separate account.....                                                                | <b>7e(3)</b> |                 |                 |
| (4) Other (specify below) .....                                                                         | <b>7e(4)</b> |                 |                 |
| ▶                                                                                                       |              |                 |                 |
| (5) Total deductions.....                                                                               | <b>7e(5)</b> |                 | <b>0</b>        |
| <b>f</b> Balance at the end of the current year (subtract line <b>7e(5)</b> from line <b>7d</b> ) ..... | <b>7f</b>    |                 | <b>14005977</b> |

**Part III Welfare Benefit Contract Information**

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

**8** Benefit and contract type (check all applicable boxes)

- a** ☐ Health (other than dental or vision)     
 **b** ☐ Dental     
 **c** ☐ Vision     
 **d** ☐ Life insurance  
**e** ☐ Temporary disability (accident and sickness)     
 **f** ☐ Long-term disability     
 **g** ☐ Supplemental unemployment     
 **h** ☐ Prescription drug  
**i** ☐ Stop loss (large deductible)     
 **j** ☐ HMO contract     
 **k** ☐ PPO contract     
 **l** ☐ Indemnity contract  
**m** ☐ Other (specify) ▶

**9** Experience-rated contracts:

|                                                                                                                                                    |                 |  |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--|---|
| <b>a</b> Premiums: (1) Amount received .....                                                                                                       | <b>9a(1)</b>    |  |   |
| (2) Increase (decrease) in amount due but unpaid .....                                                                                             | <b>9a(2)</b>    |  |   |
| (3) Increase (decrease) in unearned premium reserve .....                                                                                          | <b>9a(3)</b>    |  |   |
| (4) Earned ((1) + (2) - (3)) .....                                                                                                                 | <b>9a(4)</b>    |  | 0 |
| <b>b</b> Benefit charges (1) Claims paid .....                                                                                                     | <b>9b(1)</b>    |  |   |
| (2) Increase (decrease) in claim reserves .....                                                                                                    | <b>9b(2)</b>    |  |   |
| (3) Incurred claims (add (1) and (2)) .....                                                                                                        | <b>9b(3)</b>    |  | 0 |
| (4) Claims charged .....                                                                                                                           | <b>9b(4)</b>    |  |   |
| <b>c</b> Remainder of premium: (1) Retention charges (on an accrual basis) --                                                                      |                 |  |   |
| (A) Commissions .....                                                                                                                              | <b>9c(1)(A)</b> |  |   |
| (B) Administrative service or other fees .....                                                                                                     | <b>9c(1)(B)</b> |  |   |
| (C) Other specific acquisition costs .....                                                                                                         | <b>9c(1)(C)</b> |  |   |
| (D) Other expenses .....                                                                                                                           | <b>9c(1)(D)</b> |  |   |
| (E) Taxes .....                                                                                                                                    | <b>9c(1)(E)</b> |  |   |
| (F) Charges for risks or other contingencies .....                                                                                                 | <b>9c(1)(F)</b> |  |   |
| (G) Other retention charges .....                                                                                                                  | <b>9c(1)(G)</b> |  |   |
| (H) Total retention .....                                                                                                                          | <b>9c(1)(H)</b> |  | 0 |
| (2) Dividends or retroactive rate refunds. (These amounts were <input type="checkbox"/> paid in cash, or <input type="checkbox"/> credited.) ..... | <b>9c(2)</b>    |  |   |
| <b>d</b> Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement .....                                | <b>9d(1)</b>    |  |   |
| (2) Claim reserves .....                                                                                                                           | <b>9d(2)</b>    |  |   |
| (3) Other reserves .....                                                                                                                           | <b>9d(3)</b>    |  |   |
| <b>e</b> Dividends or retroactive rate refunds due. (Do not include amount entered in line 9c(2).) .....                                           | <b>9e</b>       |  |   |

**10** Nonexperience-rated contracts:

|                                                                                                                                                                                                                                 |            |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|
| <b>a</b> Total premiums or subscription charges paid to carrier .....                                                                                                                                                           | <b>10a</b> |  |
| <b>b</b> If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount ..... | <b>10b</b> |  |

Specify nature of costs.

**Part IV Provision of Information**

**11** Did the insurance company fail to provide any information necessary to complete Schedule A? ..... ☐ Yes ☒ No

**12** If the answer to line 11 is "Yes," specify the information not provided. ▶

|                                                                                                                                                                                                                                              |                                                                                                                                                                                                                             |                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <div>SCHEDULE C</div> <div>(Form 5500)</div> <div>Department of the Treasury<br/>Internal Revenue Service</div> <div>Department of Labor<br/>Employee Benefits Security Administration</div> <div>Pension Benefit Guaranty Corporation</div> | <div>Service Provider Information</div> <div>This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).</div> <div>▶ File as an attachment to Form 5500.</div> | OMB No. 1210-0110                       |
|                                                                                                                                                                                                                                              |                                                                                                                                                                                                                             | 2018                                    |
|                                                                                                                                                                                                                                              |                                                                                                                                                                                                                             | This Form is Open to Public Inspection. |

|                                                                                            |                                                      |     |
|--------------------------------------------------------------------------------------------|------------------------------------------------------|-----|
| For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018 |                                                      |     |
| A Name of plan<br>FERRO CORPORATION 401(K) PLAN                                            | B Three-digit plan number (PN) ▶                     | 031 |
| C Plan sponsor's name as shown on line 2a of Form 5500<br>FERRO CORPORATION                | D Employer Identification Number (EIN)<br>34-0217820 |     |

|        |                                                 |
|--------|-------------------------------------------------|
| Part I | Service Provider Information (see instructions) |
|--------|-------------------------------------------------|

You must complete this Part, in accordance with the instructions, to report the information required for **each person** who received, directly or indirectly, \$5,000 or more in total compensation (i.e., money or anything else of monetary value) in connection with services rendered to the plan or the person's position with the plan during the plan year. If a person received **only** eligible indirect compensation for which the plan received the required disclosures, you are required to answer line 1 but are not required to include that person when completing the remainder of this Part.

1 Information on Persons Receiving Only Eligible Indirect Compensation

- a Check "Yes" or "No" to indicate whether you are excluding a person from the remainder of this Part because they received only eligible indirect compensation for which the plan received the required disclosures (see instructions for definitions and conditions)..... ☒ Yes ☐ No
- b If you answered line 1a "Yes," enter the name and EIN or address of each person providing the required disclosures for the service providers who received only eligible indirect compensation. Complete as many entries as needed (see instructions).

|                                                                                                            |
|------------------------------------------------------------------------------------------------------------|
| (b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation |
| GREAT WEST LIFE & ANNUITY INS CO                                                                           |
| 84-0467907                                                                                                 |

|                                                                                                            |
|------------------------------------------------------------------------------------------------------------|
| (b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation |
|------------------------------------------------------------------------------------------------------------|

|                                                                                                            |
|------------------------------------------------------------------------------------------------------------|
| (b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation |
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|                                                                                                            |
|------------------------------------------------------------------------------------------------------------|
| (b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation |
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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**(b)** Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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**2. Information on Other Service Providers Receiving Direct or Indirect Compensation.** Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, \$5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

GREAT WEST LIFE & ANNUITY INS CO

84-0467907

| (b)<br>Service Code(s) | (c)<br>Relationship to employer, employee organization, or person known to be a party-in-interest | (d)<br>Enter direct compensation paid by the plan. If none, enter -0-. | (e)<br>Did service provider receive indirect compensation? (sources other than plan or plan sponsor) | (f)<br>Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures? | (g)<br>Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-. | (h)<br>Did the service provider give you a formula instead of an amount or estimated amount? |
|------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 15 37 50 64            | NONE                                                                                              | 27540                                                                  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                            | 0                                                                                                                                                                               | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                          |

(a) Enter name and EIN or address (see instructions)

SQUIRE PATTON BOGGS US LLP

34-0648199

| (b)<br>Service Code(s) | (c)<br>Relationship to employer, employee organization, or person known to be a party-in-interest | (d)<br>Enter direct compensation paid by the plan. If none, enter -0-. | (e)<br>Did service provider receive indirect compensation? (sources other than plan or plan sponsor) | (f)<br>Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures? | (g)<br>Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-. | (h)<br>Did the service provider give you a formula instead of an amount or estimated amount? |
|------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 29 50                  | NONE                                                                                              | 21075                                                                  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                  | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                       |                                                                                                                                                                                 | Yes <input type="checkbox"/> No <input type="checkbox"/>                                     |

(a) Enter name and EIN or address (see instructions)

SEI INVESTMENTS COMPANY

23-1707341

| (b)<br>Service Code(s) | (c)<br>Relationship to employer, employee organization, or person known to be a party-in-interest | (d)<br>Enter direct compensation paid by the plan. If none, enter -0-. | (e)<br>Did service provider receive indirect compensation? (sources other than plan or plan sponsor) | (f)<br>Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures? | (g)<br>Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-. | (h)<br>Did the service provider give you a formula instead of an amount or estimated amount? |
|------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 28 51                  | NONE                                                                                              | 20000                                                                  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                  | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                       |                                                                                                                                                                                 | Yes <input type="checkbox"/> No <input type="checkbox"/>                                     |

**2. Information on Other Service Providers Receiving Direct or Indirect Compensation.** Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, \$5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

BDO USA, LLP

13-5381590

| (b)<br>Service Code(s) | (c)<br>Relationship to employer, employee organization, or person known to be a party-in-interest | (d)<br>Enter direct compensation paid by the plan. If none, enter -0-. | (e)<br>Did service provider receive indirect compensation? (sources other than plan or plan sponsor) | (f)<br>Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures? | (g)<br>Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-. | (h)<br>Did the service provider give you a formula instead of an amount or estimated amount? |
|------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 10 50                  | NONE                                                                                              | 17300                                                                  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                  | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                       |                                                                                                                                                                                 | Yes <input type="checkbox"/> No <input type="checkbox"/>                                     |

(a) Enter name and EIN or address (see instructions)

CBIZ BENEFITS & INS SERVICES INC

31-1582098

| (b)<br>Service Code(s) | (c)<br>Relationship to employer, employee organization, or person known to be a party-in-interest | (d)<br>Enter direct compensation paid by the plan. If none, enter -0-. | (e)<br>Did service provider receive indirect compensation? (sources other than plan or plan sponsor) | (f)<br>Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures? | (g)<br>Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-. | (h)<br>Did the service provider give you a formula instead of an amount or estimated amount? |
|------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 27 50                  | NONE                                                                                              | 12800                                                                  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                  | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                       |                                                                                                                                                                                 | Yes <input type="checkbox"/> No <input type="checkbox"/>                                     |

(a) Enter name and EIN or address (see instructions)

| (b)<br>Service Code(s) | (c)<br>Relationship to employer, employee organization, or person known to be a party-in-interest | (d)<br>Enter direct compensation paid by the plan. If none, enter -0-. | (e)<br>Did service provider receive indirect compensation? (sources other than plan or plan sponsor) | (f)<br>Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures? | (g)<br>Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-. | (h)<br>Did the service provider give you a formula instead of an amount or estimated amount? |
|------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|                        |                                                                                                   |                                                                        | Yes <input type="checkbox"/> No <input type="checkbox"/>                                             | Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                       |                                                                                                                                                                                 | Yes <input type="checkbox"/> No <input type="checkbox"/>                                     |

**Part I Service Provider Information (continued)**

**3.** If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received \$1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

| (a) Enter service provider name as it appears on line 2                      | (b) Service Codes<br>(see instructions)                                                                                                                            | (c) Enter amount of indirect compensation |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| GREAT WEST LIFE & ANNUITY INS CO                                             | 15 64                                                                                                                                                              | 0                                         |
| (d) Enter name and EIN (address) of source of indirect compensation          | (e) Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation. |                                           |
| MILLENNIUM TRUST COMPANY<br>820 JONES BLVD, SUITE 420<br>OAK BROOK, IL 60523 | PAYMENTS OF UP TO \$10.00 PER ROLLOVER ACCOUNT.                                                                                                                    |                                           |
| (a) Enter service provider name as it appears on line 2                      | (b) Service Codes<br>(see instructions)                                                                                                                            | (c) Enter amount of indirect compensation |
|                                                                              |                                                                                                                                                                    |                                           |
| (d) Enter name and EIN (address) of source of indirect compensation          | (e) Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation. |                                           |
|                                                                              |                                                                                                                                                                    |                                           |
| (a) Enter service provider name as it appears on line 2                      | (b) Service Codes<br>(see instructions)                                                                                                                            | (c) Enter amount of indirect compensation |
|                                                                              |                                                                                                                                                                    |                                           |
| (d) Enter name and EIN (address) of source of indirect compensation          | (e) Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation. |                                           |
|                                                                              |                                                                                                                                                                    |                                           |

**Part II Service Providers Who Fail or Refuse to Provide Information**

**4** Provide, to the extent possible, the following information for each service provider who failed or refused to provide the information necessary to complete this Schedule.

| (a) Enter name and EIN or address of service provider (see instructions) | (b) Nature of Service Code(s) | (c) Describe the information that the service provider failed or refused to provide |
|--------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
|                                                                          |                               |                                                                                     |
| (a) Enter name and EIN or address of service provider (see instructions) | (b) Nature of Service Code(s) | (c) Describe the information that the service provider failed or refused to provide |
|                                                                          |                               |                                                                                     |
| (a) Enter name and EIN or address of service provider (see instructions) | (b) Nature of Service Code(s) | (c) Describe the information that the service provider failed or refused to provide |
|                                                                          |                               |                                                                                     |
| (a) Enter name and EIN or address of service provider (see instructions) | (b) Nature of Service Code(s) | (c) Describe the information that the service provider failed or refused to provide |
|                                                                          |                               |                                                                                     |
| (a) Enter name and EIN or address of service provider (see instructions) | (b) Nature of Service Code(s) | (c) Describe the information that the service provider failed or refused to provide |
|                                                                          |                               |                                                                                     |
| (a) Enter name and EIN or address of service provider (see instructions) | (b) Nature of Service Code(s) | (c) Describe the information that the service provider failed or refused to provide |
|                                                                          |                               |                                                                                     |

**Part III Termination Information on Accountants and Enrolled Actuaries (see instructions)**  
(complete as many entries as needed)

|                    |                     |
|--------------------|---------------------|
| <b>a</b> Name:     | <b>b</b> EIN:       |
| <b>c</b> Position: |                     |
| <b>d</b> Address:  | <b>e</b> Telephone: |
|                    |                     |

Explanation:

|                    |                     |
|--------------------|---------------------|
| <b>a</b> Name:     | <b>b</b> EIN:       |
| <b>c</b> Position: |                     |
| <b>d</b> Address:  | <b>e</b> Telephone: |
|                    |                     |

Explanation:

|                    |                     |
|--------------------|---------------------|
| <b>a</b> Name:     | <b>b</b> EIN:       |
| <b>c</b> Position: |                     |
| <b>d</b> Address:  | <b>e</b> Telephone: |
|                    |                     |

Explanation:

|                    |                     |
|--------------------|---------------------|
| <b>a</b> Name:     | <b>b</b> EIN:       |
| <b>c</b> Position: |                     |
| <b>d</b> Address:  | <b>e</b> Telephone: |
|                    |                     |

Explanation:

|                    |                     |
|--------------------|---------------------|
| <b>a</b> Name:     | <b>b</b> EIN:       |
| <b>c</b> Position: |                     |
| <b>d</b> Address:  | <b>e</b> Telephone: |
|                    |                     |

Explanation:

|                                                                                                                                                                                                               |                                                                                                                                                                                                                              |                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SCHEDULE D</b><br><b>(Form 5500)</b><br><br><small>Department of the Treasury<br/>Internal Revenue Service</small><br><br><small>Department of Labor<br/>Employee Benefits Security Administration</small> | <b>DFE/Participating Plan Information</b><br><br>This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).<br><br><b>► File as an attachment to Form 5500.</b> | OMB No. 1210-0110<br><br><div style="border: 1px solid black; padding: 5px; font-size: 1.2em; font-weight: bold;">2018</div><br><br><b>This Form is Open to Public Inspection.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

|                                                                                                                             |                                                                                               |                                       |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------|
| <b>A</b> Name of plan<br><span style="color: blue;">FERRO CORPORATION 401(K) PLAN</span>                                    | <b>B</b> Three-digit plan number (PN) <span style="color: blue;">►</span>                     | <span style="color: blue;">031</span> |
|                                                                                                                             |                                                                                               |                                       |
| <b>C</b> Plan or DFE sponsor's name as shown on line 2a of Form 5500<br><span style="color: blue;">FERRO CORPORATION</span> | <b>D</b> Employer Identification Number (EIN)<br><span style="color: blue;">34-0217820</span> |                                       |

|        |                                                                                                                                                                                  |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Part I | <b>Information on interests in MTIAs, CCTs, PSAs, and 103-12 IEs (to be completed by plans and DFEs)</b><br>(Complete as many entries as needed to report all interests in DFEs) |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                 |                                                          |                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b> Name of MTIA, CCT, PSA, or 103-12 IE: <span style="color: blue;">EQUITY INDEX FUND Q</span>                            |                                                          |                                                                                                                                                |
| <b>b</b> Name of sponsor of entity listed in (a): <span style="color: blue;">BLACKROCK INSTITUTIONAL TRUST COMPANY, N.A.</span> |                                                          |                                                                                                                                                |
| <b>c</b> EIN-PN <span style="color: blue;">94-3392410-001</span>                                                                | <b>d</b> Entity code <span style="color: blue;">C</span> | <b>e</b> Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) <span style="color: blue;">28607552</span> |
| <b>a</b> Name of MTIA, CCT, PSA, or 103-12 IE: <span style="color: blue;">LIQUIDITY FUND</span>                                 |                                                          |                                                                                                                                                |
| <b>b</b> Name of sponsor of entity listed in (a): <span style="color: blue;">J.P. MORGAN CHASE BANK</span>                      |                                                          |                                                                                                                                                |
| <b>c</b> EIN-PN <span style="color: blue;">13-6285055-001</span>                                                                | <b>d</b> Entity code <span style="color: blue;">C</span> | <b>e</b> Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) <span style="color: blue;">0</span>        |
| <b>a</b> Name of MTIA, CCT, PSA, or 103-12 IE: <span style="color: blue;">INTERMEDIATE BOND</span>                              |                                                          |                                                                                                                                                |
| <b>b</b> Name of sponsor of entity listed in (a): <span style="color: blue;">J.P. MORGAN CHASE BANK</span>                      |                                                          |                                                                                                                                                |
| <b>c</b> EIN-PN <span style="color: blue;">30-0224496-001</span>                                                                | <b>d</b> Entity code <span style="color: blue;">C</span> | <b>e</b> Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) <span style="color: blue;">0</span>        |
| <b>a</b> Name of MTIA, CCT, PSA, or 103-12 IE: <span style="color: blue;">EXTENDED EQUITY MARKET K</span>                       |                                                          |                                                                                                                                                |
| <b>b</b> Name of sponsor of entity listed in (a): <span style="color: blue;">BLACKROCK INSTITUTIONAL TRUST COMPANY, N.A.</span> |                                                          |                                                                                                                                                |
| <b>c</b> EIN-PN <span style="color: blue;">94-3199860-001</span>                                                                | <b>d</b> Entity code <span style="color: blue;">C</span> | <b>e</b> Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) <span style="color: blue;">13454336</span> |
| <b>a</b> Name of MTIA, CCT, PSA, or 103-12 IE: <span style="color: blue;">PUTNAM STABLE VALUE FUND</span>                       |                                                          |                                                                                                                                                |
| <b>b</b> Name of sponsor of entity listed in (a): <span style="color: blue;">PUTNAM FIDUCIARY TRUST COMPANY</span>              |                                                          |                                                                                                                                                |
| <b>c</b> EIN-PN <span style="color: blue;">04-3159710-202</span>                                                                | <b>d</b> Entity code <span style="color: blue;">C</span> | <b>e</b> Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) <span style="color: blue;">11280864</span> |
| <b>a</b> Name of MTIA, CCT, PSA, or 103-12 IE:                                                                                  |                                                          |                                                                                                                                                |
| <b>b</b> Name of sponsor of entity listed in (a):                                                                               |                                                          |                                                                                                                                                |
| <b>c</b> EIN-PN                                                                                                                 | <b>d</b> Entity code                                     | <b>e</b> Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)                                            |
| <b>a</b> Name of MTIA, CCT, PSA, or 103-12 IE:                                                                                  |                                                          |                                                                                                                                                |
| <b>b</b> Name of sponsor of entity listed in (a):                                                                               |                                                          |                                                                                                                                                |
| <b>c</b> EIN-PN                                                                                                                 | <b>d</b> Entity code                                     | <b>e</b> Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)                                            |

**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)**a** Name of MTIA, CCT, PSA, or 103-12 IE:**b** Name of sponsor of entity listed in (a):**c** EIN-PN**d** Entity  
code**e** Dollar value of interest in MTIA, CCT, PSA, or  
103-12 IE at end of year (see instructions)

**Part II Information on Participating Plans (to be completed by DFEs)**

(Complete as many entries as needed to report all participating plans)

**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN**a** Plan name**b** Name of  
plan sponsor**c** EIN-PN

|                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                              |                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>SCHEDULE H</b><br><b>(Form 5500)</b><br><br><small>Department of the Treasury<br/>Internal Revenue Service</small><br><br><small>Department of Labor<br/>Employee Benefits Security Administration</small><br><br><small>Pension Benefit Guaranty Corporation</small> | <b>Financial Information</b><br><br>This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA), and section 6058(a) of the Internal Revenue Code (the Code).<br><br><b>► File as an attachment to Form 5500.</b> | OMB No. 1210-0110<br><br><b>2018</b><br><br><b>This Form is Open to Public Inspection</b> |
| For calendar plan year 2018 or fiscal plan year beginning <b>01/01/2018</b> and ending <b>12/31/2018</b>                                                                                                                                                                 |                                                                                                                                                                                                                                                                              |                                                                                           |
| <b>A</b> Name of plan<br><b>FERRO CORPORATION 401(K) PLAN</b>                                                                                                                                                                                                            | <b>B</b> Three-digit plan number (PN) <b>►</b>                                                                                                                                                                                                                               | <b>031</b>                                                                                |
| <b>C</b> Plan sponsor's name as shown on line 2a of Form 5500<br><b>FERRO CORPORATION</b>                                                                                                                                                                                | <b>D</b> Employer Identification Number (EIN)<br><b>34-0217820</b>                                                                                                                                                                                                           |                                                                                           |

| <b>Part I</b> | <b>Asset and Liability Statement</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | (a) Beginning of Year | (b) End of Year |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------|-----------------|
| <b>1</b>      | Current value of plan assets and liabilities at the beginning and end of the plan year. Combine the value of plan assets held in more than one trust. Report the value of the plan's interest in a commingled fund containing the assets of more than one plan on a line-by-line basis unless the value is reportable on lines 1c(9) through 1c(14). Do not enter the value of that portion of an insurance contract which guarantees, during this plan year, to pay a specific dollar benefit at a future date. <b>Round off amounts to the nearest dollar.</b> MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 1b(1), 1b(2), 1c(8), 1g, 1h, and 1i. CCTs, PSAs, and 103-12 IEs also do not complete lines 1d and 1e. See instructions. |                 |                       |                 |
|               | <b>Assets</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                       |                 |
| <b>a</b>      | Total noninterest-bearing cash .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>1a</b>       | 0                     | 0               |
| <b>b</b>      | Receivables (less allowance for doubtful accounts):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                       |                 |
|               | <b>(1)</b> Employer contributions .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>1b(1)</b>    | 1789170               | 1770504         |
|               | <b>(2)</b> Participant contributions .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>1b(2)</b>    | 34508                 | 35854           |
|               | <b>(3)</b> Other .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>1b(3)</b>    | 0                     | 0               |
| <b>c</b>      | General investments:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                       |                 |
|               | <b>(1)</b> Interest-bearing cash (include money market accounts & certificates of deposit) .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>1c(1)</b>    | 0                     | 0               |
|               | <b>(2)</b> U.S. Government securities .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>1c(2)</b>    | 0                     | 0               |
|               | <b>(3)</b> Corporate debt instruments (other than employer securities):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                       |                 |
|               | <b>(A)</b> Preferred .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>1c(3)(A)</b> | 0                     | 0               |
|               | <b>(B)</b> All other .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>1c(3)(B)</b> | 0                     | 0               |
|               | <b>(4)</b> Corporate stocks (other than employer securities):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                       |                 |
|               | <b>(A)</b> Preferred .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>1c(4)(A)</b> | 0                     | 0               |
|               | <b>(B)</b> Common .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>1c(4)(B)</b> | 0                     | 0               |
|               | <b>(5)</b> Partnership/joint venture interests .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>1c(5)</b>    | 0                     | 0               |
|               | <b>(6)</b> Real estate (other than employer real property) .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>1c(6)</b>    | 0                     | 0               |
|               | <b>(7)</b> Loans (other than to participants) .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>1c(7)</b>    | 0                     | 0               |
|               | <b>(8)</b> Participant loans .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>1c(8)</b>    | 2163353               | 1866256         |
|               | <b>(9)</b> Value of interest in common/collective trusts .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>1c(9)</b>    | 73717718              | 53342752        |
|               | <b>(10)</b> Value of interest in pooled separate accounts .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>1c(10)</b>   |                       |                 |
|               | <b>(11)</b> Value of interest in master trust investment accounts .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>1c(11)</b>   | 0                     | 0               |
|               | <b>(12)</b> Value of interest in 103-12 investment entities .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>1c(12)</b>   | 0                     | 0               |
|               | <b>(13)</b> Value of interest in registered investment companies (e.g., mutual funds) .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>1c(13)</b>   | 122701713             | 106280569       |
|               | <b>(14)</b> Value of funds held in insurance company general account (unallocated contracts) .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>1c(14)</b>   | 0                     | 14005976        |
|               | <b>(15)</b> Other .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>1c(15)</b>   | 0                     | 0               |

| <b>1d</b> Employer-related investments:                              |              | (a) Beginning of Year | (b) End of Year |
|----------------------------------------------------------------------|--------------|-----------------------|-----------------|
| (1) Employer securities .....                                        | <b>1d(1)</b> | 2245832               | 1336251         |
| (2) Employer real property .....                                     | <b>1d(2)</b> | 0                     | 0               |
| <b>e</b> Buildings and other property used in plan operation .....   | <b>1e</b>    | 0                     | 0               |
| <b>f</b> Total assets (add all amounts in lines 1a through 1e) ..... | <b>1f</b>    | 202652294             | 178638162       |

**Liabilities**

|                                                                           |           |   |   |
|---------------------------------------------------------------------------|-----------|---|---|
| <b>g</b> Benefit claims payable .....                                     | <b>1g</b> | 0 | 0 |
| <b>h</b> Operating payables .....                                         | <b>1h</b> |   |   |
| <b>i</b> Acquisition indebtedness .....                                   | <b>1i</b> | 0 | 0 |
| <b>j</b> Other liabilities .....                                          | <b>1j</b> | 0 | 0 |
| <b>k</b> Total liabilities (add all amounts in lines 1g through 1j) ..... | <b>1k</b> | 0 | 0 |

**Net Assets**

|                                                           |           |           |           |
|-----------------------------------------------------------|-----------|-----------|-----------|
| <b>l</b> Net assets (subtract line 1k from line 1f) ..... | <b>1l</b> | 202652294 | 178638162 |
|-----------------------------------------------------------|-----------|-----------|-----------|

**Part II Income and Expense Statement**

- 2** Plan income, expenses, and changes in net assets for the year. Include all income and expenses of the plan, including any trust(s) or separately maintained fund(s) and any payments/receipts to/from insurance carriers. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 2a, 2b(1)(E), 2e, 2f, and 2g.

**Income**

|                                                                                                            |                 |         |         |
|------------------------------------------------------------------------------------------------------------|-----------------|---------|---------|
| <b>a Contributions:</b>                                                                                    |                 |         |         |
| (1) Received or receivable in cash from: <b>(A)</b> Employers.....                                         | <b>2a(1)(A)</b> | 3731472 |         |
| <b>(B)</b> Participants.....                                                                               | <b>2a(1)(B)</b> | 4981178 |         |
| <b>(C)</b> Others (including rollovers) .....                                                              | <b>2a(1)(C)</b> | 457808  |         |
| (2) Noncash contributions .....                                                                            | <b>2a(2)</b>    | 0       | 9170458 |
| (3) Total contributions. Add lines <b>2a(1)(A)</b> , <b>(B)</b> , <b>(C)</b> , and line <b>2a(2)</b> ..... | <b>2a(3)</b>    |         |         |
| <b>b Earnings on investments:</b>                                                                          |                 |         |         |
| (1) Interest:                                                                                              |                 |         |         |
| <b>(A)</b> Interest-bearing cash (including money market accounts and certificates of deposit).....        | <b>2b(1)(A)</b> | 0       |         |
| <b>(B)</b> U.S. Government securities .....                                                                | <b>2b(1)(B)</b> | 0       |         |
| <b>(C)</b> Corporate debt instruments.....                                                                 | <b>2b(1)(C)</b> | 0       |         |
| <b>(D)</b> Loans (other than to participants).....                                                         | <b>2b(1)(D)</b> | 0       |         |
| <b>(E)</b> Participant loans .....                                                                         | <b>2b(1)(E)</b> | 78262   |         |
| <b>(F)</b> Other .....                                                                                     | <b>2b(1)(F)</b> | 6537    |         |
| (G) Total interest. Add lines <b>2b(1)(A)</b> through <b>(F)</b> .....                                     | <b>2b(1)(G)</b> |         | 84799   |
| (2) Dividends: <b>(A)</b> Preferred stock.....                                                             | <b>2b(2)(A)</b> | 0       |         |
| <b>(B)</b> Common stock.....                                                                               | <b>2b(2)(B)</b> | 0       |         |
| <b>(C)</b> Registered investment company shares (e.g. mutual funds) .....                                  | <b>2b(2)(C)</b> | 5540665 |         |
| <b>(D)</b> Total dividends. Add lines <b>2b(2)(A)</b> , <b>(B)</b> , and <b>(C)</b> .....                  | <b>2b(2)(D)</b> |         |         |
| (3) Rents.....                                                                                             | <b>2b(3)</b>    |         | 0       |
| (4) Net gain (loss) on sale of assets: <b>(A)</b> Aggregate proceeds.....                                  | <b>2b(4)(A)</b> | 210464  |         |
| <b>(B)</b> Aggregate carrying amount (see instructions) .....                                              | <b>2b(4)(B)</b> | 235490  |         |
| <b>(C)</b> Subtract line <b>2b(4)(B)</b> from line <b>2b(4)(A)</b> and enter result .....                  | <b>2b(4)(C)</b> |         |         |
| (5) Unrealized appreciation (depreciation) of assets: <b>(A)</b> Real estate.....                          | <b>2b(5)(A)</b> | 0       |         |
| <b>(B)</b> Other .....                                                                                     | <b>2b(5)(B)</b> | -674091 |         |
| <b>(C)</b> Total unrealized appreciation of assets.<br>Add lines <b>2b(5)(A)</b> and <b>(B)</b> .....      | <b>2b(5)(C)</b> |         |         |

|                                                                                                |        | (a) Amount | (b) Total |
|------------------------------------------------------------------------------------------------|--------|------------|-----------|
| (6) Net investment gain (loss) from common/collective trusts .....                             | 2b(6)  |            | -1964758  |
| (7) Net investment gain (loss) from pooled separate accounts .....                             | 2b(7)  |            | 0         |
| (8) Net investment gain (loss) from master trust investment accounts .....                     | 2b(8)  |            | 0         |
| (9) Net investment gain (loss) from 103-12 investment entities .....                           | 2b(9)  |            | 0         |
| (10) Net investment gain (loss) from registered investment companies (e.g., mutual funds)..... | 2b(10) |            | -12318189 |
| c Other income.....                                                                            | 2c     |            | 17466     |
| d Total income. Add all <b>income</b> amounts in column (b) and enter total.....               | 2d     |            | -168676   |

**Expenses**

|                                                                                      |       |          |          |
|--------------------------------------------------------------------------------------|-------|----------|----------|
| e Benefit payment and payments to provide benefits:                                  |       |          |          |
| (1) Directly to participants or beneficiaries, including direct rollovers .....      | 2e(1) | 23545322 |          |
| (2) To insurance carriers for the provision of benefits .....                        | 2e(2) | 0        |          |
| (3) Other .....                                                                      | 2e(3) | 0        |          |
| (4) Total benefit payments. Add lines 2e(1) through (3).....                         | 2e(4) |          | 23545322 |
| f Corrective distributions (see instructions) .....                                  | 2f    |          | 645      |
| g Certain deemed distributions of participant loans (see instructions) .....         | 2g    |          | 63122    |
| h Interest expense.....                                                              | 2h    |          | 0        |
| i Administrative expenses: (1) Professional fees.....                                | 2i(1) | 73625    |          |
| (2) Contract administrator fees.....                                                 | 2i(2) | 0        |          |
| (3) Investment advisory and management fees.....                                     | 2i(3) | 135203   |          |
| (4) Other .....                                                                      | 2i(4) | 27539    |          |
| (5) Total administrative expenses. Add lines 2i(1) through (4).....                  | 2i(5) |          | 236367   |
| j Total expenses. Add all <b>expense</b> amounts in column (b) and enter total ..... | 2j    |          | 23845456 |

**Net Income and Reconciliation**

|                                                          |       |  |           |
|----------------------------------------------------------|-------|--|-----------|
| k Net income (loss). Subtract line 2j from line 2d ..... | 2k    |  | -24014132 |
| l Transfers of assets:                                   |       |  |           |
| (1) To this plan.....                                    | 2l(1) |  |           |
| (2) From this plan.....                                  | 2l(2) |  |           |

**Part III Accountant's Opinion**

**3** Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 5500. Complete line 3d if an opinion is not attached.

**a** The attached opinion of an independent qualified public accountant for this plan is (see instructions):

(1) ☐ Unqualified (2) ☐ Qualified (3) ☒ Disclaimer (4) ☐ Adverse

**b** Did the accountant perform a limited scope audit pursuant to 29 CFR 2520.103-8 and/or 103-12(d)?

☒ Yes ☐ No

**c** Enter the name and EIN of the accountant (or accounting firm) below:

(1) Name: BDO USA, LLP

(2) EIN: 13-5381590

**d** The opinion of an independent qualified public accountant is **not attached** because:

(1) ☐ This form is filed for a CCT, PSA, or MTIA. (2) ☐ It will be attached to the next Form 5500 pursuant to 29 CFR 2520.104-50.

**Part IV Compliance Questions**

**4** CCTs and PSAs do not complete Part IV. MTIAs, 103-12 IEs, and GIAs do not complete lines 4a, 4e, 4f, 4g, 4h, 4k, 4m, 4n, or 5. 103-12 IEs also do not complete lines 4j and 4l. MTIAs also do not complete line 4l.

During the plan year:

**a** Was there a failure to transmit to the plan any participant contributions within the time period described in 29 CFR 2510.3-102? Continue to answer "Yes" for any prior year failures until fully corrected. (See instructions and DOL's Voluntary Fiduciary Correction Program.).....

**b** Were any loans by the plan or fixed income obligations due the plan in default as of the close of the plan year or classified during the year as uncollectible? Disregard participant loans secured by participant's account balance. (Attach Schedule G (Form 5500) Part I if "Yes" is checked.) .....

|    | Yes | No | Amount |
|----|-----|----|--------|
| 4a |     | X  |        |
| 4b |     | X  |        |

|                                                                                                                                                                                                                               | Yes | No | Amount  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|---------|
| <b>c</b> Were any leases to which the plan was a party in default or classified during the year as uncollectible? (Attach Schedule G (Form 5500) Part II if "Yes" is checked.) .....                                          |     | X  |         |
| <b>4c</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>d</b> Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a. Attach Schedule G (Form 5500) Part III if "Yes" is checked.).....                                |     | X  |         |
| <b>4d</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>e</b> Was this plan covered by a fidelity bond? .....                                                                                                                                                                      | X   |    | 1000000 |
| <b>4e</b>                                                                                                                                                                                                                     | X   |    | 1000000 |
| <b>f</b> Did the plan have a loss, whether or not reimbursed by the plan's fidelity bond, that was caused by fraud or dishonesty? .....                                                                                       |     | X  |         |
| <b>4f</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>g</b> Did the plan hold any assets whose current value was neither readily determinable on an established market nor set by an independent third party appraiser?.....                                                     |     | X  |         |
| <b>4g</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>h</b> Did the plan receive any noncash contributions whose value was neither readily determinable on an established market nor set by an independent third party appraiser?.....                                           |     | X  |         |
| <b>4h</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>i</b> Did the plan have assets held for investment? (Attach schedule(s) of assets if "Yes" is checked, and see instructions for format requirements.) .....                                                                | X   |    |         |
| <b>4i</b>                                                                                                                                                                                                                     | X   |    |         |
| <b>j</b> Were any plan transactions or series of transactions in excess of 5% of the current value of plan assets? (Attach schedule of transactions if "Yes" is checked, and see instructions for format requirements.) ..... |     | X  |         |
| <b>4j</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>k</b> Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC? .....                                                           |     | X  |         |
| <b>4k</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>l</b> Has the plan failed to provide any benefit when due under the plan?.....                                                                                                                                             |     | X  |         |
| <b>4l</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>m</b> If this is an individual account plan, was there a blackout period? (See instructions and 29 CFR 2520.101-3.) .....                                                                                                  |     | X  |         |
| <b>4m</b>                                                                                                                                                                                                                     |     | X  |         |
| <b>n</b> If 4m was answered "Yes," check the "Yes" box if you either provided the required notice or one of the exceptions to providing the notice applied under 29 CFR 2520.101-3. ....                                      |     |    |         |
| <b>4n</b>                                                                                                                                                                                                                     |     |    |         |

**5a** Has a resolution to terminate the plan been adopted during the plan year or any prior plan year?..... ☐ Yes ☒ No  
If "Yes," enter the amount of any plan assets that reverted to the employer this year \_\_\_\_\_.

**5b** If, during this plan year, any assets or liabilities were transferred from this plan to another plan(s), identify the plan(s) to which assets or liabilities were transferred. (See instructions.)

| 5b(1) Name of plan(s) | 5b(2) EIN(s) | 5b(3) PN(s) |
|-----------------------|--------------|-------------|
|                       |              |             |
|                       |              |             |
|                       |              |             |
|                       |              |             |
|                       |              |             |

**5c** If the plan is a defined benefit plan, is it covered under the PBGC insurance program (See ERISA section 4021.)? ..... ☐ Yes ☐ No ☐ Not determined  
If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year \_\_\_\_\_. (See instructions.)

|                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                             |                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>SCHEDULE R</b><br><b>(Form 5500)</b><br><br>Department of the Treasury<br>Internal Revenue Service<br><br>Department of Labor<br>Employee Benefits Security Administration<br><br>Pension Benefit Guaranty Corporation | <b>Retirement Plan Information</b><br><br>This schedule is required to be filed under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6058(a) of the Internal Revenue Code (the Code).<br><br>▶ <b>File as an attachment to Form 5500.</b> | OMB No. 1210-0110<br><br><b>2018</b><br><br><b>This Form is Open to Public Inspection.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

|                                                                                           |                                                                    |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>A</b> Name of plan<br><u>FERRO CORPORATION 401(K) PLAN</u>                             | <b>B</b> Three-digit plan number (PN) ▶<br><u>031</u>              |
| <b>C</b> Plan sponsor's name as shown on line 2a of Form 5500<br><u>FERRO CORPORATION</u> | <b>D</b> Employer Identification Number (EIN)<br><u>34-0217820</u> |

|               |                      |
|---------------|----------------------|
| <b>Part I</b> | <b>Distributions</b> |
|---------------|----------------------|

All references to distributions relate only to payments of benefits during the plan year.

|                                                                                                                                                                                                                                                                    |          |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| <b>1</b> Total value of distributions paid in property other than in cash or the forms of property specified in the instructions .....                                                                                                                             | <b>1</b> | <u>0</u> |
| <b>2</b> Enter the EIN(s) of payor(s) who paid benefits on behalf of the plan to participants or beneficiaries during the year (if more than two, enter EINs of the two payors who paid the greatest dollar amounts of benefits):<br><br>EIN(s): <u>84-1455663</u> |          |          |
| <b>Profit-sharing plans, ESOPs, and stock bonus plans, skip line 3.</b>                                                                                                                                                                                            |          |          |
| <b>3</b> Number of participants (living or deceased) whose benefits were distributed in a single sum, during the plan year .....                                                                                                                                   | <b>3</b> |          |

|                |                                                                                                                                                                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Part II</b> | <b>Funding Information</b> (If the plan is not subject to the minimum funding requirements of section 412 of the Internal Revenue Code or ERISA section 302, skip this Part.) |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                           |                              |                             |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------------|
| <b>4</b> Is the plan administrator making an election under Code section 412(d)(2) or ERISA section 302(d)(2)? .....                                                                                                                                                                                                                                                      | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| <b>If the plan is a defined benefit plan, go to line 8.</b>                                                                                                                                                                                                                                                                                                               |                              |                             |                              |
| <b>5</b> If a waiver of the minimum funding standard for a prior year is being amortized in this plan year, see instructions and enter the date of the ruling letter granting the waiver. <b>Date:</b> Month _____ Day _____ Year _____<br><b>If you completed line 5, complete lines 3, 9, and 10 of Schedule MB and do not complete the remainder of this schedule.</b> |                              |                             |                              |
| <b>6 a</b> Enter the minimum required contribution for this plan year (include any prior year accumulated funding deficiency not waived) .....                                                                                                                                                                                                                            | <b>6a</b>                    |                             |                              |
| <b>b</b> Enter the amount contributed by the employer to the plan for this plan year .....                                                                                                                                                                                                                                                                                | <b>6b</b>                    |                             |                              |
| <b>c</b> Subtract the amount in line 6b from the amount in line 6a. Enter the result (enter a minus sign to the left of a negative amount) .....                                                                                                                                                                                                                          | <b>6c</b>                    |                             |                              |
| <b>If you completed line 6c, skip lines 8 and 9.</b>                                                                                                                                                                                                                                                                                                                      |                              |                             |                              |
| <b>7</b> Will the minimum funding amount reported on line 6c be met by the funding deadline? .....                                                                                                                                                                                                                                                                        | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| <b>8</b> If a change in actuarial cost method was made for this plan year pursuant to a revenue procedure or other authority providing automatic approval for the change or a class ruling letter, does the plan sponsor or plan administrator agree with the change? .....                                                                                               | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |

|                 |                   |
|-----------------|-------------------|
| <b>Part III</b> | <b>Amendments</b> |
|-----------------|-------------------|

|                                                                                                                                                                                                                            |                                   |                                   |                               |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------------------------|
| <b>9</b> If this is a defined benefit pension plan, were any amendments adopted during this plan year that increased or decreased the value of benefits? If yes, check the appropriate box. If no, check the "No" box..... | <input type="checkbox"/> Increase | <input type="checkbox"/> Decrease | <input type="checkbox"/> Both | <input type="checkbox"/> No |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------------------------|

|                |                                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Part IV</b> | <b>ESOPs</b> (see instructions). If this is not a plan described under section 409(a) or 4975(e)(7) of the Internal Revenue Code, skip this Part. |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                              |                                         |                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|
| <b>10</b> Were unallocated employer securities or proceeds from the sale of unallocated securities used to repay any exempt loan? .....                                                      | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
| <b>11 a</b> Does the ESOP hold any preferred stock? .....                                                                                                                                    | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            |
| <b>b</b> If the ESOP has an outstanding exempt loan with the employer as lender, is such loan part of a "back-to-back" loan? (See instructions for definition of "back-to-back" loan.) ..... | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
| <b>12</b> Does the ESOP hold any stock that is not readily tradable on an established securities market? .....                                                                               | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |

For Paperwork Reduction Act Notice, see the Instructions for Form 5500.

Schedule R (Form 5500) 2018  
v. 171027

**Part V Additional Information for Multiemployer Defined Benefit Pension Plans**

**13** Enter the following information for each employer that contributed more than 5% of total contributions to the plan during the plan year (measured in dollars). See instructions. *Complete as many entries as needed to report all applicable employers.*

**a** Name of contributing employer

**b** EIN

**c** Dollar amount contributed by employer

**d** Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

**e** Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) \_\_\_\_\_

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): \_\_\_\_\_

**a** Name of contributing employer

**b** EIN

**c** Dollar amount contributed by employer

**d** Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

**e** Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) \_\_\_\_\_

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): \_\_\_\_\_

**a** Name of contributing employer

**b** EIN

**c** Dollar amount contributed by employer

**d** Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

**e** Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) \_\_\_\_\_

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): \_\_\_\_\_

**a** Name of contributing employer

**b** EIN

**c** Dollar amount contributed by employer

**d** Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

**e** Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) \_\_\_\_\_

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): \_\_\_\_\_

**a** Name of contributing employer

**b** EIN

**c** Dollar amount contributed by employer

**d** Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

**e** Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) \_\_\_\_\_

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): \_\_\_\_\_

**a** Name of contributing employer

**b** EIN

**c** Dollar amount contributed by employer

**d** Date collective bargaining agreement expires (If employer contributes under more than one collective bargaining agreement, check box ☐ and see instructions regarding required attachment. Otherwise, enter the applicable date.) Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

**e** Contribution rate information (If more than one rate applies, check this box ☐ and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)

(1) Contribution rate (in dollars and cents) \_\_\_\_\_

(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): \_\_\_\_\_

- 14** Enter the number of participants on whose behalf no contributions were made by an employer as an employer of the participant for:

**a** The current year .....

**b** The plan year immediately preceding the current plan year .....

**c** The second preceding plan year .....

**14a****14b****14c**

- 15** Enter the ratio of the number of participants under the plan on whose behalf no employer had an obligation to make an employer contribution during the current plan year to:

**a** The corresponding number for the plan year immediately preceding the current plan year .....

**b** The corresponding number for the second preceding plan year .....

**15a****15b**

- 16** Information with respect to any employers who withdrew from the plan during the preceding plan year:

**a** Enter the number of employers who withdrew during the preceding plan year .....

**b** If line 16a is greater than 0, enter the aggregate amount of withdrawal liability assessed or estimated to be assessed against such withdrawn employers .....

**16a****16b**

- 17** If assets and liabilities from another plan have been transferred to or merged with this plan during the plan year, check box and see instructions regarding supplemental information to be included as an attachment. .... ☐

**Part VI Additional Information for Single-Employer and Multiemployer Defined Benefit Pension Plans**

- 18** If any liabilities to participants or their beneficiaries under the plan as of the end of the plan year consist (in whole or in part) of liabilities to such participants and beneficiaries under two or more pension plans as of immediately before such plan year, check box and see instructions regarding supplemental information to be included as an attachment .... ☐

- 19** If the total number of participants is 1,000 or more, complete lines (a) through (c)

- a** Enter the percentage of plan assets held as:

Stock: \_\_\_\_\_ % Investment-Grade Debt: \_\_\_\_\_ % High-Yield Debt: \_\_\_\_\_ % Real Estate: \_\_\_\_\_ % Other: \_\_\_\_\_ %

- b** Provide the average duration of the combined investment-grade and high-yield debt:

☐ 0-3 years ☐ 3-6 years ☐ 6-9 years ☐ 9-12 years ☐ 12-15 years ☐ 15-18 years ☐ 18-21 years ☐ 21 years or more

- c** What duration measure was used to calculate line 19(b)?

☐ Effective duration ☐ Macaulay duration ☐ Modified duration ☐ Other (specify):



## **Ferro Corporation 401(k) Plan**

### **Financial Statements and Supplemental Schedule**

Years Ended December 31, 2018 and 2017

## **Ferro Corporation 401(k) Plan**

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Financial Statements and Supplemental Schedule  
Years Ended December 31, 2018 and 2017

# Ferro Corporation 401(k) Plan

## Contents

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|                                     |     |
|-------------------------------------|-----|
| <b>Independent Auditor's Report</b> | 3-4 |
|-------------------------------------|-----|

### **Financial Statements**

|                                                            |      |
|------------------------------------------------------------|------|
| Statements of Net Assets Available for Benefits            | 6    |
| Statements of Changes in Net Assets Available for Benefits | 7    |
| Notes to Financial Statements                              | 8-14 |

### **Supplemental Schedule**

|                                                                |    |
|----------------------------------------------------------------|----|
| Schedule H, Line 4i - Schedule of Assets (Held at End of Year) | 16 |
|----------------------------------------------------------------|----|



## **Independent Auditor's Report**

Ferro Corporation Plan Administrator  
Ferro Corporation 401(k) Plan  
Mayfield Heights, Ohio

### ***Report on the Financial Statements***

We were engaged to audit the accompanying financial statements of the Ferro Corporation 401(k) Plan ("the Plan"), which comprise the statements of net assets available for benefits as of December 31, 2018 and 2017, and the related statements of changes in net assets available for benefits for the years then ended, and the related notes to the financial statements.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditor's Responsibility***

Our responsibility is to express an opinion on these financial statements based on conducting the audits in accordance with auditing standards generally accepted in the United States of America. Because of the matter described in the *Basis for Disclaimer of Opinion* paragraph, however, we were not able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion.

### ***Basis for Disclaimer of Opinion***

As permitted by 29 CFR 2520.103-8 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974, the plan administrator instructed us not to perform, and we did not perform, any auditing procedures with respect to the information summarized in Note 3, which was certified by Great-West Trust Company, LLC, the trustee of the Plan, except for comparing the information with the related information included in the financial statements. We have been informed by the plan administrator that the trustee holds the Plan's investment assets and executes investment transactions. The plan administrator has obtained a certification from the trustee as of and for the years ended December 31, 2018 and 2017 that the information provided to the plan administrator by the trustee is complete and accurate.

***Disclaimer of Opinion***

Because of the significance of the matter described in the *Basis for Disclaimer of Opinion* paragraph, we have not been able to obtain sufficient, appropriate audit evidence to provide a basis for an audit opinion. Accordingly, we do not express an opinion on these financial statements.

***Other Matter***

The supplemental schedule of Assets Held at End of Year as of December 31, 2018 is required by the Department of Labor's (DOL) Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 and is presented for the purpose of additional analysis and is not a required part of the financial statements. Because of the significance of the matter described in the *Basis for Disclaimer of Opinion* paragraph, we do not express an opinion on the supplemental schedule referred to above.

***Report on Form and Content in Compliance With DOL Rules and Regulations***

The form and content of the information included in the financial statements and supplemental schedule, other than that derived from the information certified by the trustee, have been audited by us in accordance with auditing standards generally accepted in the United States of America and, in our opinion, are presented in compliance with the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974.

*BDO USA, LLP*

Cleveland, Ohio  
September 16, 2019

## **Financial Statements**

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# Ferro Corporation 401(k) Plan

## Statements of Net Assets Available for Benefits

| <i>December 31,</i>                      | <b>2018</b>           | <b>2017</b>    |
|------------------------------------------|-----------------------|----------------|
| <b>Assets</b>                            |                       |                |
| <b>Investments, at fair value:</b>       |                       |                |
| Mutual Funds                             | <b>\$ 106,280,569</b> | \$ 122,701,713 |
| Common Collective Trusts                 | <b>53,342,752</b>     | 73,976,703     |
| Ferro Corporation Stock                  | <b>1,336,251</b>      | 2,245,832      |
|                                          | <b>160,959,572</b>    | 198,924,248    |
| <b>Investments, at contract value:</b>   |                       |                |
| Guaranteed Investment Contract           | <b>14,005,976</b>     | -              |
| <b>Receivables:</b>                      |                       |                |
| Employer contributions                   | <b>1,770,504</b>      | 1,789,170      |
| Participant contributions                | <b>35,854</b>         | 34,508         |
| Notes receivable from participants       | <b>1,866,256</b>      | 2,163,353      |
|                                          | <b>3,672,614</b>      | 3,987,031      |
| <b>Net Assets Available for Benefits</b> | <b>\$ 178,638,162</b> | \$ 202,911,279 |

*See accompanying notes to financial statements.*

# Ferro Corporation 401(k) Plan

## Statements of Changes in Net Assets Available for Benefits

| <i>For the Years Ended December 31,</i>                      | <b>2018</b>           | 2017           |
|--------------------------------------------------------------|-----------------------|----------------|
| <b>Investment (loss) income</b>                              |                       |                |
| Dividends and interest                                       | \$ 5,547,202          | \$ 4,964,514   |
| Net (depreciation) appreciation in fair value of investments | <b>(15,223,583)</b>   | 24,666,753     |
| Total investment (loss) income                               | <b>(9,676,381)</b>    | 29,631,267     |
| <b>Interest income on notes receivable from participants</b> | <b>78,262</b>         | 82,706         |
| <b>Contributions</b>                                         |                       |                |
| Employer                                                     | <b>3,731,472</b>      | 3,804,370      |
| Participants                                                 | <b>4,981,178</b>      | 4,786,685      |
| Rollover                                                     | <b>457,808</b>        | 5,592,519      |
| Total contributions                                          | <b>9,170,458</b>      | 14,183,574     |
| <b>Deductions from Net Assets Attributed to:</b>             |                       |                |
| Distributions to participants                                | <b>23,609,089</b>     | 24,036,832     |
| Administrative fees                                          | <b>236,367</b>        | 188,504        |
| Total deductions                                             | <b>23,845,456</b>     | 24,225,336     |
| <b>Net (decrease) increase</b>                               | <b>(24,273,117)</b>   | 19,672,211     |
| <b>Net assets available for benefits:</b>                    |                       |                |
| Beginning of year                                            | <b>202,911,279</b>    | 183,239,068    |
| <b>End of year</b>                                           | <b>\$ 178,638,162</b> | \$ 202,911,279 |

*See accompanying notes to financial statements.*

# Ferro Corporation 401(k) Plan

## Notes to Financial Statements

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### 1. Description of the Plan

The following is a brief description of the Ferro Corporation 401(k) Plan (the "Plan"). Participants should refer to the Plan document for a more complete description of the Plan's provisions.

#### **General**

The Plan is a defined contribution profit sharing plan with a 401(k) feature covering all U.S. employees of Ferro Corporation (the Company) and its domestic subsidiaries. Employees classified as independent contractors or leased workers, employees covered under a collective bargaining agreement that does not expressly provide for participation in the Plan, or employees receiving disability benefits under a long-term disability plan maintained by the Company are not eligible to participate in the Plan. A non-resident alien who receives no income from sources within the United States and any person who is retained pursuant to a personal services contract that provides such person is not eligible for benefits are also ineligible to participate in the Plan.

Eligible employees begin participation in the Plan on the first administratively feasible payroll period after their employment commencement date.

The Plan complies with Section 401(a) of the Internal Revenue Code of 1986, as amended, as well as the Employee Retirement Income Security Act of 1974, as amended.

#### **Contributions**

Subject to certain limitations, Plan participants may elect to make pre-tax contributions of 1% to 40% of eligible compensation.

Pretax contributions made to the Plan are matched by the Company at 100% of pretax contributions attributable to the first 2% of an employee's eligible compensation, and at 50% of the pretax contributions in excess of the first 2% and up to the next 6% of an employee's eligible compensation. Except for certain collective bargaining unit participants, matching employer contributions are discretionary.

The Plan also permits participants to make after-tax contributions, which when added to a participant's pre-tax contributions cannot exceed 40% of eligible compensation. Plan participants who are age 50 and who have reached certain maximum pre-tax contributions levels may also make pre-tax catch-up contributions of \$6,000 in 2018 and 2017. Neither after-tax contributions nor catch-up contributions are matched by employer contributions.

In addition to matching contributions, the Company makes basic pension contributions for certain eligible employees. Such contributions are based on years of service at the end of the plan year as noted below:

| <i>Years of Service</i> | Contribution Rate on<br>Compensation Below Social<br>Security Wage Base (SSWB) | Contribution Rate on<br>Compensation Above SSWB up<br>to IRS Compensation Limit |
|-------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 0 - 5                   | 2%                                                                             | 4%                                                                              |
| 6 - 10                  | 3%                                                                             | 6%                                                                              |
| 11 or more              | 4%                                                                             | 8%                                                                              |

# **Ferro Corporation 401(k) Plan**

## **Notes to Financial Statements**

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The Company also makes profit sharing contributions for certain collective bargaining unit participants who are not eligible for basic pension contributions and makes certain Company contributions for certain collective bargaining unit participants.

### ***Forfeitures***

Forfeitures of the nonvested portion of the Company's matching contribution are recognized as a reduction of the Company's matching contributions or basic pension contributions. The total amount of forfeitures available to the Plan was \$529,839 and \$484,553 for the years ended December 31, 2018 and 2017, respectively. The amount of the aforementioned balance that was used to reduce employer contributions was \$304,240 and \$194,000 for the years ended December 31, 2018 and 2017, respectively.

### ***Investment Funds***

There are various funds, each with varying degrees of risk, offered under the Plan. The participants allocate contributions among the funds and, generally at their discretion, may change the allocation percentages at any time, with the exception that they may not invest in or transfer funds into Ferro Corporation stock. Funds already invested in Ferro Corporation stock may remain invested in such stock.

### ***Vesting***

Company matching, basic pension, and collectively-bargained company contributions vest at a rate of 20% per year of service. One collectively-bargained Profit-Sharing contribution vests 0% in first 2 years, but 100% after 2 years of service.

### ***Payment of Benefits***

Upon termination of service, the vested amount of the Company contributions and earnings thereon are paid at the election of the participant. Participants receive their voluntary contributions and earnings thereon in a single lump-sum cash payment, unless participants are vested in the Ferro Corporation stock. Distributions from this fund may be paid in the form of Common Stock or cash at the participant's election.

### ***Withdrawals***

Aside from normal retirement distributions, payments upon termination of service, and withdrawals after age 59-1/2, pretax savings may be withdrawn only for reasons of extreme financial hardship, as defined under federal law. After-tax savings may be withdrawn at any time and for any reason.

### ***Notes Receivable from Participants***

Loans are permitted to be made to active participants. The notes receivable documenting the loans are secured by the participant's vested interest in the Plan and must be for a minimum of \$1,000 up to the lesser of (a) one half of the participant's vested account balance (including Company contributions) or (b) 100% of the value of their pretax, after-tax, and rollover contribution accounts. Loans made to participants may not exceed \$50,000, reduced by the amount of the highest outstanding loan balance they have had during the preceding 12 months. Loans may be made for any reason while employed at Ferro. The employee can have a maximum of two loans outstanding at a time. The loan repayment period may not be less than one year and may not exceed five years

# **Ferro Corporation 401(k) Plan**

## **Notes to Financial Statements**

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unless the loan is used to purchase a participant's principal residence for which the period may not exceed 20 years, through payroll withholdings at fixed dollar levels. The interest rates are based on the prime rate in effect on the date of the loan origination and range from 3.25% - 8.25%.

### ***Administrative Fees***

During 2018 and 2017, the Company paid certain administrative expenses of the Plan. Investment transfer fees, brokerage fees, transfer taxes, and other expenses incurred in connection with the sale, purchase, and management of the assets of the investment funds were paid by the Plan.

## **2. Summary of Significant Accounting Policies**

### ***Basis of Presentation***

The financial statements of the Plan are prepared using the accrual basis of accounting and in accordance with accounting principles generally accepted in the United States of America.

### ***Investments***

The Plan's investments, except for the guaranteed investment contract, are stated at fair value. Fair value is the price that would be received to sell an asset (an exit price) in the principal or most advantageous market for the asset in an orderly transaction between market participants on the measurement date. See Note 4 for discussion of fair value measurements.

Guaranteed investment contracts held by a defined contribution plan that are fully benefit responsive are reported at contract value. Contract value is the relevant measurement because contract value is the amount participants would receive if they were to initiate permitted transaction under the terms of the contract. Contract value represents net contributions plus interest at the contract rate. See Note 5 for discussion of the guaranteed investment contract.

Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. Net (depreciation) appreciation includes the Plan's gains and losses on investments bought and sold as well as held during the year.

The Plan holds shares of Ferro Corporation stock, which is an allowable party-in-interest transaction under ERISA.

Investment securities, in general, are exposed to various risks, such as interest rate, credit and overall market volatility risks. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the statements of net assets available for benefits.

### ***Notes Receivable from Participants***

Notes receivable from participants are measured at their unpaid principal balance plus any accrued but unpaid interest. Delinquent participant loans are reclassified as distributions based upon the terms of the Plan document.

# Ferro Corporation 401(k) Plan

## Notes to Financial Statements

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### ***Use of Estimates***

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and changes therein and disclosure of contingent assets and liabilities. Actual results could differ from those estimates.

### ***Evaluation of Subsequent Events***

The Company has evaluated subsequent events through September 16, 2019, which is the date the financial statements were available to be issued.

### **3. Certified Information**

The Plan administrator has elected for the years ended December 31, 2018 and 2017 the method of compliance permitted by 29 CFR 2520.103-8 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under ERISA. Accordingly, as permitted under such election, the plan administrator has obtained certifications from the trustee of the Plan that all of the information provided by them is complete and accurate. Information included in the accompanying financial statements as to investments and notes receivable from participants, and net investment income (loss) is presented in reliance solely upon those certifications.

### **4. Fair Value Measurements**

Accounting Standards Codification ("ASC") 820, Fair Value Measurements and Disclosure, defines fair value and provides guidance for measuring fair value and expands disclosures about fair value measurements in accordance with accounting principles generally accepted in the United States of America. ASC 820 does not require any new fair value measurements, but rather applies to all other accounting pronouncements that require or permit fair value measurements. ASC 820 establishes a framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobserved inputs (Level 3 measurements). The three levels of the fair value hierarchy are described below:

Level 1: Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Plan has the ability to access.

Level 2: Inputs to the valuation methodology include:

- Quoted prices for similar assets or liabilities in active markets;
- Quoted prices for identical or similar assets or liabilities in inactive markets;
- Inputs other than quoted prices that are observable for the asset or liability;
- Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

If the asset or liability has a specified contractual term, the Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3: Inputs to the valuation methodology are unobservable and significant to the fair value measurements.

# Ferro Corporation 401(k) Plan

## Notes to Financial Statements

The asset's or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Following is a description of the valuation methodologies used for assets measured at fair value.

*Mutual funds and Ferro Corporation stock:* Valued at the daily closing prices as reported by the fund. Mutual funds held by the Plan are open-end mutual funds that are registered with the Securities and Exchange Commission. These funds are required to publish their daily net asset value (NAV) and to transact at that price. The mutual funds held by the Plan are deemed to be actively traded.

*Common/collective trusts:* Valued at the NAV of units of a bank collective trust. The NAV, as provided by the trustee, is used as a practical expedient to estimate fair value. The NAV is based on the fair value of the underlying investments held by the fund less its liabilities. This practical expedient is not used when it is determined to be probable that the fund will see the investment for an amount different than the reported NAV. Participant transactions (purchases and sales) may occur daily. Were the Plan to initiate a full redemption of the collective trust, the investment advisor reserves the right to temporarily delay withdrawal from the trust in order to ensure that securities liquidations will be carried out in an orderly business manner.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Plan believes its valuation methods are appropriate and consistent with other participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following tables set forth by level, within the fair value hierarchy, the Plan's assets at fair value as of December 31, 2018 and 2017:

|                           | Level 1        | Level 2 | Level 3 | Total          |
|---------------------------|----------------|---------|---------|----------------|
| Mutual funds              | \$ 106,280,569 | \$ -    | \$ -    | \$ 106,280,569 |
| Ferro Corporation stock   | 1,336,251      | -       | -       | 1,336,251      |
| Common/collective trusts* |                |         |         | 53,342,752     |

|                                   |                       |             |             |                       |
|-----------------------------------|-----------------------|-------------|-------------|-----------------------|
| <b>Balance, December 31, 2018</b> | <b>\$ 107,416,820</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 160,959,572</b> |
|-----------------------------------|-----------------------|-------------|-------------|-----------------------|

|                           | Level 1        | Level 2 | Level 3 | Total          |
|---------------------------|----------------|---------|---------|----------------|
| Mutual funds              | \$ 122,701,713 | \$ -    | \$ -    | \$ 122,701,713 |
| Ferro Corporation stock   | 2,245,832      | -       | -       | 2,245,832      |
| Common/collective trusts* |                |         |         | 73,976,703     |

|                                   |                       |             |             |                       |
|-----------------------------------|-----------------------|-------------|-------------|-----------------------|
| <b>Balance, December 31, 2017</b> | <b>\$ 124,947,545</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 198,924,248</b> |
|-----------------------------------|-----------------------|-------------|-------------|-----------------------|

\*In accordance with ASC 820-10, certain investments that were measured at NAV (or its equivalent) as a practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in the tables above for the investments in common/collective trusts are to permit reconciliation of the fair value hierarchy to the line items presented in the Statements of Net Assets Available for Benefits.

# **Ferro Corporation 401(k) Plan**

## **Notes to Financial Statements**

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### **5. Guaranteed Investment Contract**

In December 2018, the Plan invested in a benefit-responsive investment contract with Principal Life Insurance Company. Principal Life Insurance Company maintains the contributions in a general account. The account is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses.

Contract value is the relevant measurement attribute for that portion of the net asset available for benefits attributable to the contract. Participants ordinarily may direct the withdrawal or transfer of all or a portion of their investment at contract value. Currently, plan management believes that the occurrence of an event that would cause the Plan to transact at less than contract value is not probable. Therefore, contract value approximates fair value.

There are no reserves against contract value for credit risk at the contract issuer or otherwise. The effective annual guaranteed interest rate for this arrangement is 1.43% for the 2018 plan year, which is compounded daily. The investment is a single group annuity contract with a fixed rate of interest.

### **6. Plan Termination**

Although the Company has not expressed any intent to terminate the Plan agreement, it may do so at any time. In the event of such termination, each participant will receive 100% of their account balance.

### **7. Federal Income Taxes**

The Plan obtained its latest determination letter on September 27, 2016, in which the Internal Revenue Service stated that the Plan, as then designed, was in compliance with the applicable requirements of the Internal Revenue code. The Plan administrator and the Plan's tax counsel believe that the Plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code. Therefore, no provision for income taxes has been included in the Plan's financial statements.

Accounting principles generally accepted in the United States of America require plan management to evaluate tax positions taken by the Plan and recognize a tax liability (or asset) if the Plan has taken an uncertain position that more likely than not would not be sustained upon examination by the tax authorities. The plan administrator has analyzed the tax positions taken by the Plan, and has concluded that as of December 31, 2018 and 2017, there are no uncertain positions taken or expected to be taken that would require recognition of a liability (or asset) or disclosure in the financial statements. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

### **8. Party in Interest**

Certain Plan investments are shares of mutual funds managed by Great-West Trust Company, LLC, trustee of the Plan and shares of Ferro Corporation stock. These transactions qualify as party in interest transactions. Fees incurred by the Plan for the investment management services were \$135,203 and \$147,037 for the years ended December 31, 2018 and 2017, respectively.

# Ferro Corporation 401(k) Plan

## Notes to Financial Statements

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### 9. Reconciliation of Financial Statements to Form 5500

For the year ended December 31, 2017, the financial statements report the value of the Plan's stable value fund at contract value whereas the Form 5500 reported the stable value fund at fair value. For the year ended December 31, 2018, the financial statements and the Form 5500 report the value of the Plan's stable value fund at contract value.

The following is a reconciliation of net assets available for benefits per the financial statements to the Form 5500:

| <i>December 31,</i>                                                   | <b>2018</b>           | 2017           |
|-----------------------------------------------------------------------|-----------------------|----------------|
| Net assets available for benefits per the financial statements        | <b>\$ 178,638,162</b> | \$ 202,911,279 |
| Adjustment from contract value to fair value for<br>stable value fund | -                     | (258,985)      |
| <b>Net assets available for benefits per Form 5500</b>                | <b>\$ 178,638,162</b> | \$ 202,652,294 |

The following is a reconciliation of net income (loss) per the financial statements to the Form 5500 for the years ended:

| <i>December 31,</i>                                                                 | <b>2018</b>           | 2017          |
|-------------------------------------------------------------------------------------|-----------------------|---------------|
| Net (decrease) increase per the financial statements                                | <b>\$(24,273,117)</b> | \$ 19,672,211 |
| Change in adjustment between contract value and fair<br>value for stable value fund | 258,985               | (92,892)      |
| <b>Net (loss) income per Form 5500</b>                                              | <b>\$(24,014,132)</b> | \$ 19,579,319 |

### 10. Subsequent Events

In January 2019, the Plan Sponsor announced the reorganization to its global operations and the closing of certain facilities in the United States, resulting in a partial plan termination as defined by ERISA. Under ERISA, a partial plan termination may occur if a significant percentage of the Plan participants are terminated because of an action taken by the Plan Sponsor. If a partial plan termination occurs, full vesting in the employer contributions is required for the affected participants who leave the Plan during the measurement period of the event causing the partial plan termination. In this case, the measurement period began January 2019, and any affected participants who have terminated employment during the measurement period have become fully vested in their account balances.

## **Supplemental Schedule**

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**Ferro Corporation 401(k) Plan**  
**EIN# 34-0217820**  
**Plan Number 031**

**Schedule H, Line 4i - Schedule of Assets (Held at End of Year)**

*December 31, 2018*

| (a)                                                      | (b)                                                                                                          | (c)                                   | (e)                |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------|
| Identity of issue, borrower,<br>lessor, or similar party | Description of investment including<br>maturity date, rate of interest,<br>collateral, par or maturity value | Current value at<br>December 31, 2018 |                    |
| Blackrock Equity Index-Q                                 | Common Collective Trust                                                                                      | \$                                    | <b>28,607,552</b>  |
| Vanguard Target Retirement Fund 2025                     | Registered Investment Company                                                                                |                                       | <b>18,747,257</b>  |
| Principal Life Insurance Company                         | Guaranteed Investment Contract                                                                               |                                       | <b>14,005,976</b>  |
| Blackrock Extended Equity Market (MT)                    | Common Collective Trust                                                                                      |                                       | <b>13,454,336</b>  |
| * JPMorgan Small Cap Equity Fund                         | Registered Investment Company                                                                                |                                       | <b>12,245,202</b>  |
| Putnam Stable Value Fund                                 | Common Collective Trust                                                                                      |                                       | <b>11,280,864</b>  |
| American Funds Europacific                               | Registered Investment Company                                                                                |                                       | <b>10,532,711</b>  |
| Vanguard Target Retirement Fund 2030                     | Registered Investment Company                                                                                |                                       | <b>10,254,054</b>  |
| Vanguard Target Retirement Fund 2020                     | Registered Investment Company                                                                                |                                       | <b>9,177,193</b>   |
| Western Asset Core Plus Bond                             | Registered Investment Company                                                                                |                                       | <b>8,295,398</b>   |
| * JPMorgan Large Cap Growth                              | Registered Investment Company                                                                                |                                       | <b>8,079,455</b>   |
| Vanguard Target Retirement Fund 2035                     | Registered Investment Company                                                                                |                                       | <b>7,154,086</b>   |
| American Funds Washington Mutual                         | Registered Investment Company                                                                                |                                       | <b>5,277,928</b>   |
| Vanguard Target Retirement Fund 2040                     | Registered Investment Company                                                                                |                                       | <b>5,224,737</b>   |
| Vanguard Target Retirement Fund 2015                     | Registered Investment Company                                                                                |                                       | <b>2,884,607</b>   |
| Vanguard Target Retirement Income Fund                   | Registered Investment Company                                                                                |                                       | <b>2,825,326</b>   |
| Vanguard Target Retirement Fund 2045                     | Registered Investment Company                                                                                |                                       | <b>2,718,123</b>   |
| Vanguard Target Retirement Fund 2050                     | Registered Investment Company                                                                                |                                       | <b>2,131,719</b>   |
| * Ferro Corporation Stock                                | Company Stock                                                                                                |                                       | <b>1,336,251</b>   |
| Vanguard Target Retirement Fund 2055                     | Registered Investment Company                                                                                |                                       | <b>466,637</b>     |
| Vanguard Target Retirement Fund 2060                     | Registered Investment Company                                                                                |                                       | <b>266,136</b>     |
|                                                          |                                                                                                              |                                       | <b>174,965,548</b> |
| * Participant loans                                      | Loans (3.25% - 8.25%)                                                                                        |                                       | <b>1,866,256</b>   |
|                                                          |                                                                                                              | \$                                    | <b>176,831,804</b> |

\* Indicates Party-in-interest

**Ferro Corporation 401(k) Plan**  
**EIN# 34-0217820**  
**Plan Number 031**

**Schedule H, Line 4i - Schedule of Assets (Held at End of Year)**

*December 31, 2018*

| (a)                                                      | (b)                                                                                                          | (c)                                   | (e)                   |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------|
| Identity of issue, borrower,<br>lessor, or similar party | Description of investment including<br>maturity date, rate of interest,<br>collateral, par or maturity value | Current value at<br>December 31, 2018 |                       |
| Blackrock Equity Index-Q                                 | Common Collective Trust                                                                                      | \$                                    | <b>28,607,552</b>     |
| Vanguard Target Retirement Fund 2025                     | Registered Investment Company                                                                                |                                       | <b>18,747,257</b>     |
| Principal Life Insurance Company                         | Guaranteed Investment Contract                                                                               |                                       | <b>14,005,976</b>     |
| Blackrock Extended Equity Market (MT)                    | Common Collective Trust                                                                                      |                                       | <b>13,454,336</b>     |
| * JPMorgan Small Cap Equity Fund                         | Registered Investment Company                                                                                |                                       | <b>12,245,202</b>     |
| Putnam Stable Value Fund                                 | Common Collective Trust                                                                                      |                                       | <b>11,280,864</b>     |
| American Funds Europacific                               | Registered Investment Company                                                                                |                                       | <b>10,532,711</b>     |
| Vanguard Target Retirement Fund 2030                     | Registered Investment Company                                                                                |                                       | <b>10,254,054</b>     |
| Vanguard Target Retirement Fund 2020                     | Registered Investment Company                                                                                |                                       | <b>9,177,193</b>      |
| Western Asset Core Plus Bond                             | Registered Investment Company                                                                                |                                       | <b>8,295,398</b>      |
| * JPMorgan Large Cap Growth                              | Registered Investment Company                                                                                |                                       | <b>8,079,455</b>      |
| Vanguard Target Retirement Fund 2035                     | Registered Investment Company                                                                                |                                       | <b>7,154,086</b>      |
| American Funds Washington Mutual                         | Registered Investment Company                                                                                |                                       | <b>5,277,928</b>      |
| Vanguard Target Retirement Fund 2040                     | Registered Investment Company                                                                                |                                       | <b>5,224,737</b>      |
| Vanguard Target Retirement Fund 2015                     | Registered Investment Company                                                                                |                                       | <b>2,884,607</b>      |
| Vanguard Target Retirement Income Fund                   | Registered Investment Company                                                                                |                                       | <b>2,825,326</b>      |
| Vanguard Target Retirement Fund 2045                     | Registered Investment Company                                                                                |                                       | <b>2,718,123</b>      |
| Vanguard Target Retirement Fund 2050                     | Registered Investment Company                                                                                |                                       | <b>2,131,719</b>      |
| * Ferro Corporation Stock                                | Company Stock                                                                                                |                                       | <b>1,336,251</b>      |
| Vanguard Target Retirement Fund 2055                     | Registered Investment Company                                                                                |                                       | <b>466,637</b>        |
| Vanguard Target Retirement Fund 2060                     | Registered Investment Company                                                                                |                                       | <b>266,136</b>        |
|                                                          |                                                                                                              |                                       | <b>174,965,548</b>    |
| * Participant loans                                      | Loans (3.25% - 8.25%)                                                                                        |                                       | <b>1,866,256</b>      |
|                                                          |                                                                                                              |                                       | <b>\$ 176,831,804</b> |

\* Indicates Party-in-interest