Appendix 4

Facility Report

Facility Report

Rock Springs

Final

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I. Introduction

All capitalized terms not otherwise defined in this Facility Report will have the meaning set forth in the Consent Decree or in Appendix 9.

A. Purpose

The purposes of this Facility Report are to:

1. Identify Simplot's Upstream Operations, Downstream Operations, Mixed-Use air pollution control devices (APCDs), and Mixed-Use Units at the Facility.

2. Identify compliance projects set forth in Section VI ("Compliance Projects"). Compliance Projects of this Facility Report include the Acid Value Recovery System and the Granulation Recovery System.

3. Identify certain units associated with Simplot's Acid Value Recovery System and Acid Value Recovery Units. Cleaning wastes or other materials from these units will be recovered into Upstream Operations as designated in this Facility Report or to the Acid Value Recovery System in accordance with Section VI (Compliance Projects).

4. Identify certain units associated with Simplot's SPA Recovery Units. Cleaning wastes or other materials from these units will be recovered directly in the Granulation process as designated in this Facility Report or to the Acid Value Recovery System in accordance with Section VI (Compliance Projects).

5. Identify certain Downstream Operations units associated with Simplot's Granulation Recovery System and Granulation Recovery System Units. Cleaning wastes or other materials from these units will be recovered in the Granulation process as designated in this Facility Report or to the Granulation Recovery System in accordance with Section VI (Compliance Projects).

6. Address phosphoric acid product spills and leaks in accordance with Section VII (Containment of Phosphoric Acid Production Related Spills and Leaks).

7. Identify categories of future equipment installations, materials from which may be managed with materials from Upstream Operations when meeting the conditions set forth in Section VIII (Proposed Phosphoric Acid Production Related Operations) and Section IX (Non-Phosphoric Acid

Production Proposed Projects) and Section XI (Authorized Future Installations).

Hazardous wastes generated from the production of sulfuric acid, washes related to the transport of sulfuric acid to the phosphoric acid plant, and wastes generated from the cleaning of sulfuric acid transportation related equipment are not within the scope of this Facility Report.

B. Overview

A major purpose of the Facility Report is to specify how Simplot will handle processing materials from designated units at the Facility.

For the units designated as part of Upstream Operations or Downstream Operations, or identified as Mixed-Use Units, SPA Recovery Units, Acid Value Recovery Units, or Granulation Recovery Units, cleaning wastes or other materials will be handled as described below.

1. Cleaning wastes or other materials generated from Upstream Operations/ Mixed-Use Units

   a. Cleaning Solution Materials

      i. If Non-Hazardous Aqueous Cleaning Solution (NHACS), Phosphogypsum Stack System Wastewater, and/or Process Wastewater have been used to clean these units, the cleaning wastes or other materials from these units may be input to Upstream Operations or discharged to the Phosphogypsum Stack System.

      ii. Prior to commencement of the Acid Value Recovery System, if Sulfuric Acid Cleaning Solution (SACS) is used to clean these units, the cleaning wastes or other materials from these units may continue to be managed consistent with Simplot's "Consolidated Materials Management Practices" report, as described in the Consent Decree in Paragraph 18. Following commencement of operations of the Acid Value Recovery System, if SACS or Acid Value Recovery System effluent are used to clean these units, then the cleaning wastes or other materials from these units may be input to the Acid Value Recovery System for use in Upstream Operations in accordance with Section VI (Compliance Projects), except in the case of an Acid Value Recovery System process upset (see below).

      iii. Following commencement of operations of the Acid Value Recovery System, if Simplot does not utilize the Acid Value Recovery System to recover cleaning wastes or other materials identified in (ii) above, or if

any cleaning solutions other than those listed in (i) & (ii) above are used to clean these units, then Simplot must make a RCRA hazardous waste determination, and if the wastes are hazardous, then Simplot shall manage the materials in accordance with RCRA Requirements.

b. Scrubber Materials

Process materials from phosphoric acid operations (e.g., scrubber effluent) may be input to Upstream Operations or discharged to the Phosphogypsum Stack System. Scrubber cleaning materials must be managed as described in 1.a above.

c. Spills and Leaks

These are handled in accordance with Appendix 5.A (Minimizing and Addressing Spills and Leaks) and Section VII (Containment of Phosphoric Acid Production Related Spills and Leaks). Spills and leaks of phosphoric acid, sulfuric acid[1], FSA, SACS, or Acid Value Recovery System effluent in containable impervious areas ("Containable Impervious Areas") may be returned to a tank with similar material or input to the Acid Value Recovery System for use in Upstream Operations in accordance with Section VI (Compliance Projects). Spills and leaks of Process Wastewater, Phosphogypsum Stack System Wastewater, or NHACS in Containable Impervious Areas may be returned to the Phosphogypsum Stack System.

2. Materials Generated from Acid Value Recovery System Operations

a. Acid Value Recovery System Units

Prior to commencement of the Acid Value Recovery System, if SACS, NHACS, Process Wastewater, or Phosphogypsum Stack System Wastewater are used to clean Acid Value Recovery System Units, then the cleaning wastes or other materials from these units may continue to be managed consistent with Simplot's Consolidated Materials Management Practices. Following commencement of operation of the Acid Value Recovery System, SPA secondary solids (filter solids) can be used in the specific Upstream Operations/Mixed-Use Units identified in Section IV.F of this Facility Report or in Granulation. Following commencement of operations of the Acid Value Recovery System, if SACS, NHACS, Process Wastewater, Phosphogypsum Stack System Wastewater, or Acid Value

[1] This is only for incidental spills and leaks of sulfuric acid in the phosphoric acid manufacturing area. In the phosphoric acid manufacturing area, the infrastructure is set up to manage phosphoric acid materials. For other spills and leaks of sulfuric acid, where they can be segregated, the acid will be recovered for use or managed according to RCRA Requirements.

Recovery System effluent are used to clean SPA Recovery Units, or Acid Value Recovery System Units, then the materials from these units may be input to the Acid Value Recovery System for use in Upstream Operations in accordance with Section VI (Compliance Projects).

b. Acid Value Recovery Tank(s)

Influents to the Acid Value Recovery Tank(s) are limited to the following: (i) cleaning wastes or other materials generated from the use of SACS, FSA, NHACS, Phosphogypsum Stack System Wastewater, Process Wastewater, and Acid Value Recovery System effluent; (ii) materials from SPA Recovery Units; (iii) spills and leaks per 1.c above; and (iv) sulfuric acid for SACS make-up. Acid Value Recovery Tank(s) operation is described in Section VI.A.2. Project Operations of this Facility Report. Acid Value Recovery Tank(s) Effluent may be input to Upstream Operations or used for cleaning of the Acid Value Recovery System Units and returned to the Acid Value Recovery System. The Acid Value Recovery Tank(s) itself is designated as an Acid Value Recovery System Unit, and therefore for materials generated from cleaning the Acid Value Recovery Tank(s) itself, see 2.a above.

c. Process Upsets

In the event of a process upset that prevents the recovery of cleaning solutions via the Acid Value Recovery System, then Simplot (1) must not discharge to the Phosphogypsum Stack System any SACS or Acid Value Recovery System effluent used in cleaning those units affected by the process upset; and (2) must make a RCRA hazardous waste determination of any cleaning wastes or other materials generated from Acid Value Recovery System Units and/or SPA Recovery Units, and if the wastes are hazardous, then Simplot shall manage such wastes in accordance with RCRA Requirements.

3. Materials Generated from Granulation Recovery System Units and Tank(s)

a. Granulation Recovery System Units

If SACS, NHACS, Process Wastewater, Phosphogypsum Stack System Wastewater, or Granulation Recovery System effluent are used to clean Granulation Recovery System Units, then the cleaning wastes or other materials from these units may be input to the Granulation Recovery System for use in Downstream Operations in accordance with Section VI (Compliance Projects). If the cleaning wastes or other materials are non-hazardous, then these wastes or other materials can be sent to the Phosphogypsum Stack.

b. Granulation Recovery Tank(s)

Influents to the Granulation recovery tank(s) ("Granulation Recovery Tanks") are limited to the following: (i) Phosphogypsum Stack System Wastewater, Process Wastewater, NHACS, SACS, and Granulation Recovery System effluent; and (ii) spills and leaks of phosphoric acid, sulfuric acid[2], SACS, or Granulation Recovery System effluent in Containable Impervious Areas. Granulation Recovery Tank(s) operation as described in Section VI (Compliance Projects) and Section VI.B.2 Project Operations of this Facility Report. The Granulation Recovery Tank(s) itself is designated as a Granulation Recovery System Unit, and therefore for cleaning wastes or other materials generated from cleaning the Granulation Recovery Tank(s) itself, see 3.a above.

c. Process Upsets

In the event of a process upset that prevents the recovery of cleaning solutions via the Granulation Recovery System, then Simplot must make a hazardous waste determination of cleaning wastes or other materials generated from those units affected by the process upset, and if the wastes are hazardous, then Simplot shall manage the wastes in accordance with RCRA Requirements.

4. Materials Generated from Downstream Operations Only

If materials from Downstream Operations are not sent to the Granulation Recovery System or Acid Value Recovery System for recovery and reuse, then a hazardous waste determination will be made, and if the wastes are hazardous, then Simplot shall manage the wastes in accordance with RCRA Requirements.

[2] This is only for incidental spills and leaks of sulfuric acid in the Granulation manufacturing area. In the Granulation manufacturing area, the infrastructure is set up to manage phosphoric acid and ammonium phosphate materials. For other spills and leaks of sulfuric acid, where they can be segregated, the acid will be recovered for use or managed according to RCRA Requirements.

II. Background[3]

Simplot's Rock Springs Facility ("Facility") produces both liquid and granular fertilizer products. 69% phosphoric acid (commonly known as Super Phosphoric Acid or "SPA") and fluorosilicic acid ("FSA") are produced as liquid products. Both MAP and 40 Rock™ granular products are manufactured in a single production train designated as Granulation. Ammonia and phosphoric acid are the primary reactants for MAP and 40 Rock™ and are consumed in the production of ammoniated fertilizers on-site. Commercial FSA is produced from process condensate generated in the phosphoric evaporation areas.

Phosphoric acid is produced by the reaction of phosphate rock with sulfuric acid in two isothermal reactors. The reaction yields phosphoric acid and Phosphogypsum. Phosphogypsum is filtered from the phosphoric acid on three filter tables, slurried with Process Wastewater in three gypsum slurry tanks and the resultant slurry is pumped to the lined Phosphogypsum Stack System. Because the production of phosphoric acid is a water-intensive process and water is used throughout the process (e.g., as acid dilution, evaporators, condensers, and as a pipe and tank cleaning agent), approximately 120 million to 170 million gallons of Process Wastewater are constantly stored in and circulating throughout the Facility's Phosphogypsum Stack System and the phosphoric acid production process.

The Phosphogypsum Stack and Process Wastewater Return Pond are lined with a synthetic 16 oz. non-woven polypropylene geotextile and a 60 to 80 mil high density polyethylene liner over that. The Facility is not authorized to discharge any process water to the environment under environmental permits.

[3] This Background Section is provided solely for informative purposes and is not a definitive or exhaustive description of the Facility or its operations.

III. Products at Simplot Rock Springs

The Facility manufactures phosphoric acid, which can be used to make both granular and liquid fertilizer products. Three primary concentrations of phosphoric acid, as described below, are used to produce: MAP, 40 Rock, 16-20-0, or liquid fertilizer products:

- 28% phosphoric acid is routed to MAP, 40 Rock, or 16-20-0 production and to further concentration steps;
- 44% phosphoric acid is routed to MAP, 40 Rock, or 16-20-0 production, and to further concentration steps;
- 54% clarified phosphoric acid (greater than 1% solids) can be routed to either MAP, 40 Rock, or 16-20-0. 54% phosphoric acid can be evaporated to a 69% phosphoric acid, or SPA. 54% clarified phosphoric acid (greater than 1% solids) can also be sold directly as MGA.

The Facility also produces FSA.

IV. Phosphoric Acid, FSA, and SPA Production – Phosphoric Acid Plant

The Facility's phosphoric acid plant ("Phosphoric Acid Plant") consists of three filtration buildings, three evaporation buildings, and four clarification and storage areas. One of the filtration buildings, one evaporation building, one clarification area, and two storage areas have a synthetic lining system under the concrete consisting of a 60-mil high density polyethylene liner. The production area is mostly contained with concrete curbing, a concrete containment ditch, and a below-grade high density polyethylene lining system to collect runoff and any incidental spills that may occur The associated sumps in all of the areas are made of reinforced concrete with a synthetic lining system composed of high density polyethylene, polypropylene, or stainless steel. All of the Process Wastewater flows are collected and transferred to the Phosphogypsum Stack System via high density polyethylene lines at a combined flow rate of about 11,000 gallons per minute.

The FSA production area is fed concentrated process condensate primarily from the D and E evaporator circuits with some from C evaporator. Most of the FSA production area has a synthetic lining system under the concrete consisting of a 60 mil high density polyethylene liner. The FSA production area is mostly contained with concrete curbing. There is one sump made of reinforced concrete with a stainless steel lining system composed of high density polyethylene.

A. Standard Acid Flow Configuration

The Phosphoric Acid Plant produces four concentrations of phosphoric acid for use in fertilizer manufacturing: 28% P_2O_5[4], 44% P_2O_5, 54% P_2O_5, 69% P_2O_5[5]. Figure 3 shows the overall production process at the Facility. Deviations from the standard acid flow configuration are necessary on periodic short-term intervals.

The Facility produces phosphoric acid in two reactors designated as #1 Reactor and #2 Reactor. The acid from both reactors mixes at the 28% Clarifiers (MF-1501, MF-1503). Prior to mixing at the 28% Clarifier(s) (MF-1501, MF-1503), the acid flow is as follows:

[4] All concentrations of P_2O_5 are approximate and fluctuate slightly.
[5] Note that although the terms P_2O_5 and phosphoric acid (H_3PO_4) are used interchangeably, the concentrations are not interchangeable. Simplot manufactures phosphoric acid; however, in this document, we refer to the concentration of the acid in terms of P_2O_5 concentration, rather than phosphoric acid concentration. P_2O_5 concentration can be converted to an approximate concentration of phosphoric acid by multiplying by 1.3808. Phosphoric acid is converted to an approximate concentration of P_2O_5 by multiplying by 0.7242.

#1 Reactor:

Post-reactor, unclarified 28% acid overflows to the #1 Filter Feed Tank (MF-1203) and then pumped through the #1 Filter Table (GF-1301) to the #1 Filter #1 Filtrate Box (MS-1308) and/or through the #2 Filter Table (GF-6301) to the #2 Filter #1 Filtrate Box (MS-6308) then to the 28% clarifier(s) (MF-1501, MF-1503).

#2 Reactor:

Post-reactor, unclarified 28% acid overflows to the #2 Filter Feed Tank (MF-1253) and then through the #1 Filter Table (GF-1301) to the #1 Filter #1 Filtrate Box (MS-1308) and/or through the #2 Filter Table (GF-6301) to the #2 Filter #1 Filtrate Box (MS-6308) and/or through the #3 Filter Table (GF-6351) to the #3 Filter #1 Filtrate Pump Box (MS-6358) then to the 28% clarifier(s) (MF-1501, MF-1503).

1. 28% Acid Processed to 28% Clarification

    - 28% acid from the filter table(s) (GF-1301, GF-6301, GF-6351) is pumped to the #1 28% Clarifier and the #2 28% Clarifier (MF-1501, MF-1503).
    - Underflow (solids) from both of the 28% clarifier(s) (MF-1501, MF-1503) are pumped to the #1 filter section of the filter table(s) (GF-1301, GF-6301, GF-6351) for acid recovery.
    - Overflow (clarified acid) from #1 28% Clarifier (MF-1501) is gravity-fed to 28% Storage Tank (MF-1502) and/or #2 28% Storage Tank (MF-1514). Overflow (clarified acid) from the #2 28% Clarifier (MF-1503) is gravity-fed to the #3 28% Storage Tank (MF-1504).

2. Clarified 28% Acid Processed to 44% Clarification

    - A, B, D, and/or E evaporator(s) (GE-1402A, GE-1402B, GE-6401, GE-1450) are fed from the 28% storage tank(s) (MF-1502, MF-1504, MF-1514). The 28% storage tank(s) also feed 28% acid to Granulation.
    - 44% acid from A, B, D, and/or E evaporator(s) (GE-1402A, GE-1402B, GE-6401, GE-1450) is pumped to the 44% Clarifier (MF-6551).
    - Underflow from the 44% Clarifier (MF-6551) is pumped either to the 28% clarifier(s) (MF-1501, MF- 1503), to the 44%/54% Sludge Tank (MF-6508), or to the Pre-Mix Tank (MF-1509).

- Overflow (clarified 44% acid) is gravity-fed from the 44% Clarifier (MF-6551) to the 44% Storage Tank (MF-6552).

3. Clarified 44% Acid Processed to 54% Clarification or Feedstock to Granulation

    - From the 44% Storage Tank (MF-6552) via the 44% Transfer Line(s), 44% acid is pumped to D Evaporator (GE-6401) and/or E Evaporator (GE-1450) for concentration to 54% acid; and/or is pumped to Granulation via the 44% Transfer Line(s) to #1, #2, #3, or #4 Granulation Acid Feed Line(s).

    - Acid from the 44% Storage Tank (MF-6552) via the 44% Transfer Line(s) is also used to fill evaporators A, B, D, and E (GE-1402A, GE-1402B, GE-6401, GE-1450) for startup for 44% evaporation service, and can also be sent to C evaporator (GE-2701) for evaporation to 69% acid.

    - Concentrated 54% acid is pumped from D Evaporator (GE-6401) and/or E Evaporator (GE-1450) to the 54% Clarifier (MF-6503).

    - Underflow (solids) from the 54% Clarifier (MF-6503) is pumped to the 28% clarifier(s) (MF-1501, MF- 1503), to the 44%/54% Sludge Tank (MF-6508), or to the Pre-Mix Tank (MF-1509).

    - Overflow (clarified 54% acid) from the 54% Clarifier (MF-6503) is gravity-fed to the 54% Storage Tank (MF-6504).

4. 54% Storage Tank (MF-6504) to 54% Acid Users via 54% Transfer Line(s)

    - 54% acid is pumped to Granulation via the 54% Transfer Line(s) to #1, #2, #3, or #4 Granulation Acid Feed Line(s).

    - 54% acid is pumped to C Evaporator (GE-2701) for further evaporation to 69% acid.

    - 54% acid is pumped to the 54% Shipping Clarifier (MF-1507) via 54% Transfer Line(s).

    - 54% acid is used to fill D Evaporator (GE-6401) and/or E Evaporator (GE-1450) for startup for 54% acid service via the 54% Transfer Line(s).

5. 54% Shipping Clarifier

    - Overflow (clarified 54% acid) from the 54% Shipping Clarifier (MF-1507) is gravity-fed to the 54% Shipping Storage Tank (MF-2503).
    - Underflow from the 54% Shipping Clarifier (MF-1507) is pumped to the Pre-Mix Tank (MF-1509). Underflow can be pumped to the 28% Clarifier (MF-1501).

6. 54% Shipping Storage Tank

    - Provides 54% acid to rail car and truck load out facilities for shipment or to the Granulation plant for dry product production.

7. 44%/54% Sludge Tank (MF-6508) and/or Pre-Mix Tank (MF-1509)

    - Solids from 44%/54% Sludge Tank (MF-6508) are pumped to either the 28% clarifier(s) (MF-1501, MF- 1503), the Pre-Mix Tank (MF-1509), Granulation Mix Tank (MF-1621), or Granulation Feed Tank (MF-1610).
    - Solids from Pre-Mix Tank (MF-1509) are pumped to either the 28% clarifier(s) (MF-1501, MF- 1503), Granulation Mix Tank (MF-1621), or Granulation Feed Tank (MF-1610).

B. Alternate Acid Flow Configuration

Note: The Facility has the capability to route around all clarifiers and storage tanks within the phosphoric acid process on a temporary basis, except for the following Upstream Operations units:

- #1 or #2 Reactor
- Filter Table(s)
- Gypsum Slurry Tank(s)
- Evaporator(s) A, B, D, or E

When cleaning the 44% clarifier and/or associated storage tanks, the #2 28% clarifier and #3 28% storage tank are converted from 28% acid service to 44% acid clarification and storage. Similarly, when cleaning the 54% clarifier and/or 54% storage tank, the 44% clarifier and storage are converted to 54% service.

C. Phosphoric Acid Transfer to SPA and Downstream Operations

1. Acid Transfer between the Phosphoric Acid Plant and Granulation

The Facility has four primary transfer lines that serve to transport clarified 28%, 44% and/or 54% phosphoric acid from the Phosphoric Acid Plant to the Granulation plant ("Granulation Plant"). The #1, #2, #3, and/or #4 Granulation Acid Feed Line(s) transport 44% and/or 54% acid from the 44% Transfer Line(s) and/or from the 54% Transfer Line(s) to various locations in the Granulation process.

All transfer lines described above are cleaned with cleaning solution to remove precipitated solids and scale to maintain acceptable pressure levels and acid flow rates. The locations of the transfer lines are illustrated in Figure 6. The estimated line lengths and cleaning frequencies are listed in Table 1.

2. Sludge Transfer between the Phosphoric Acid Plant and Granulation

The Facility has two primary transfer lines that serve to transport phosphoric acid sludge streams from the Phosphoric Acid Plant to the Granulation Plant The 44%/54% Sludge Line transports sludge from the 44%/54% Sludge Tank (MF-6508) to the Pre-Mix Tank (MF-1509). The Mixed Sludge Line transports sludge from the Pre-Mix Tank (MF-1509) to the Granulation Plant. The Pre-Mix Tank (MF-1509) can be bypassed sending sludge directly from the 44%/54% Sludge Tank (MF-1509) to the Granulation Mix Tank (MF-1621) and/or Granulation Feed Tank (MF-1610).

All transfer lines described above are cleaned with cleaning solution to remove precipitated solids and scale to maintain acceptable pressure levels and acid flow rates. The locations of the transfer lines are illustrated in Figure 7. The estimated line lengths and cleaning frequencies are listed in Table 2.

3. Acid Transfer between the Phosphoric Acid Plant and C Evaporator

The Facility has two primary transfer lines that serve to transport 54% phosphoric acid from the Phosphoric Acid Plant to C Evaporator. The 54% Transfer Line(s) transport 54% acid from the 54% Storage Tank (MF-6504) to the C Evaporator Feed Line and C Evaporator Feed Line transports 44%/54% into the C Evaporator.

The Facility has two primary transfer lines that serve to transport 44% phosphoric acid from the Phosphoric Acid Plant to C Evaporator. The 44% Transfer Line(s) transport 44% acid from the 44% Storage Tank (MF-6552) to the C Evaporator Feed Line and C Evaporator Feed Line transports 44%/54% into the C Evaporator.

All transfer lines described above are cleaned with cleaning solution to remove precipitated solids and scale to maintain acceptable pressure levels and acid flow rates. The locations of the transfer lines are illustrated in Figure 8. The estimated line lengths and cleaning frequencies are listed in Table 3.

4. Acid Transfer between the Phosphoric Acid Plant and Truck and Rail Load Out

   The Facility has one primary transfer line that serves to transport clarified 54% phosphoric acid from the Phosphoric Acid Plant to the truck and rail load out area. The 54% Transfer to Acid Load Out Line transports 54% acid from the 54% Shipping Storage Tank to the truck and rail load out area for acid load out.

   All transfer lines described above are cleaned with cleaning solution to remove precipitated solids and scale to maintain acceptable pressure levels and acid flow rates. The locations of the transfer lines are illustrated in Figure 9. The estimated line lengths and cleaning frequencies are listed in Table 4.

D. Railcar Cleaning Operations

The Facility washes phosphoric acid railcars using a circulating wash loop from the Car Wash Sump (MF-2504) to the railcar and back to the Car Wash Sump. A non-hazardous aqueous solution is used as make-up water into the Car Wash Sump. When the sump level or wash solution quality requires, the wash material is pumped to the 28% Clarifier (MF-1501) for recovery.

E. FSA Standard Process Configuration

The Facility recovers fluoride vapors from C, D, and E Evaporators. The recovery of fluoride vapors produces process condensate containing fluorides. The FSA production systems produce FSA product with an acid strength of 23- 25% H_2SiF_6 and is typically used by municipalities as a water fluoridation chemical. Process condensate within the D and E evaporation circuits are concentrated with C Evaporator Process Condensate utilized as makeup into these circuits. Once the concentration of the process condensate reaches the desired strength, the process condensate is sent to clarifiers to remove solids. The clarified FSA is pumped through a final cartridge filter element to remove any remaining solids to produce a clear product FSA. The FSA process diagram is shown in Figure 5 and the process steps described below.

1. Process condensate from C, D, and/or E evaporation circuits

   - C Evaporator Process Condensate is pumped to E Evaporator FSA Recirculation Tank (MS-1456), D Evaporator Secondary FSA

Recirculation Tank (MS-6416), and/or D Evaporator Hotwell (MS-6408) for makeup into the scrubbing systems.

- Process vapor containing fluoride from the D Evaporator is scrubbed with a series of sprays within the vapor duct and by the D Evaporator Fluoride Recovery Tower (MF-6404).
- The sprays are supplied from the D Evaporator FSA Recirculation Tank (MS-6406) and the fluoride rich solution from the sprays is collected in the same tank. The solution sent to the recovery tower is supplied from the D Evaporator Secondary FSA Recirculation Tank (MS-6416) and the solution from the recovery tower is collected in this same tank.
- The solutions are recirculated and additional fluoride is recovered in the process condensate. Concentrations within the process condensate are monitored with density meters and controlled by blowing down from the recirculated system and making up with C Evaporator process condensate and/or a non-hazardous aqueous solution.
- Blowdown from the D Evaporator Secondary FSA Recirculation Tank (MS-6416) is routed as makeup to the D Evaporator FSA Recirculation Tank (MS-6406).
- Process vapor containing fluoride from the E Evaporator is captured with a series of sprays within the vapor duct and by the E Evaporator Fluoride Recovery Tower (MF-1451).
- The E Evaporator sprays and tower are supplied from the E Evaporator FSA Recirculation Tank (MS-1456) and the fluoride rich solution from the E Evaporator spray/tower system is collected in the E Evaporator FSA Recirculation Tank (MS-1456).
- The solutions are recirculated and additional fluoride is recovered in the process condensate. Concentrations within the process condensate are monitored with density meters and controlled by blowing down from the recirculated system and making up with C Evaporator process condensate and/or a nonhazardous aqueous solution.
- Blowdown of process condensate from the D Evaporator FSA Recirculation Tank (MS-6406) and the E Evaporator FSA Recirculation Tank (MS-1456) is routed to D Evaporator Acid Sump

(J-6401) when FSA is not being produced (Process Wastewater) or to the FSA Settling Tanks (MS-6701, MS-6702, MS-6703) when FSA is being produced (FSA is "produced" once enters the transfer line to the FSA settling tanks).

2. Filter solids from concentrated FSA and pump to storage

   - Once the solids suspended in the FSA are allowed to settle in the FSA Settling Tanks (MS-6701, MS-6702, MS-6703), the clarified FSA is pumped through FSA polishing filters (GF-6701, GF-6702), which provide a final filtration stage for the FSA prior to collection in the FSA Storage Tank (MF-6701).

   - The clarified and filtered FSA is transferred to the FSA Storage Tank (MF-6701) as a finished product. From the FSA Storage Tank, railcars or trucks are loaded from the FSA load out pumps (PP-6702A, PP-6702B).

   The Facility has one primary transfer line, FSA Shipping Line, that serves to transport FSA between the FSA storage tanks and the rail and truck load out area. The location of the transfer line is illustrated in Figure 10. The line designation and cleaning frequency is listed in Table 5.

F. 69% Acid - SPA Standard Process Configuration

The SPA process described below is illustrated in Figure 4.

C Evaporator (GE-2701) is utilized to further concentrate 44% or 54% acid to 69% acid. After evaporation, the 69% acid is aged and filtered to produce SPA product. The acid flow is as follows:

1. 44%/54% processed to 69%

   - From the 54% Storage Tank (MF-6504), 54% acid is pumped to the C Evaporator (GE-2701) or from the 44% Storage Tank (MF-6552), 44% acid is pumped to the C Evaporator (GE-2701) for concentration to 69% acid.

   - 69% acid overflows from C Evaporator into the C Evaporator Cooler Tank (MS-2711). The 69% acid is pumped through the SPA Product Cooler (TT-2703), a shell and tube heat exchanger. Once cooled it proceeds to the aging tanks.

2. 69% acid aging and filtration

    - There are 3 aging tanks that are run in series and are labeled #1 Aging Tank (MF-2788), #2 Aging Tank (MF-2773), and #3 Aging Tank (MF-2751). The phosphoric acid is allowed to 'age' by slow cooling and slight agitation which crystallizes impurities in the 69% acid by post-precipitation.

    - From the #3 Aging Tank (MF-2751), the 69% acid passes through a second cooler, the Filter Feed Cooler (TT-2771), and proceeds to the Filter Feed Tank (MS-2771).

    - The solids that were precipitated out in the aging tanks are removed in the SPA Filter Press (GF- 2784).

    - The solids filtered out of the 69% acid with the SPA Filter Press are removed from the filter cloths and collected in the SPA Re-Pulp Sump (GS-2787). The solids still contain approximately 50% P_2O_5 value, and are mixed with a non-hazardous aqueous solution, Process Wastewater, and/or SPA Recovery Unit effluent, to suspend the solids into a pumpable slurry.

    - The re-pulp sump slurry is pumped to the SPA Sludge Tank (MF-2754). This tank stores the phosphate rich slurry and is pumped to the Granulation Mix Tank (MF-1621), Granulation Feed Tank (MF-1610), Pre-Mix Tank (MF-1509), the 44%/54% Sludge Tank (MF-6508), #2 Filter Feed Tank (MF-1253), and/or to the #1, #2, and/or # 3 Filter Tables for recovery.

3. SPA Product to Storage and Shipment

    - The filtered 69% acid is sent to the SPA Filtrate Receiver Tank (MS-2758). Final polishing of the acid occurs in the Filtrate Receiver Tank (MS-2758)

    - The finished SPA product is transferred to two storage tanks, the A and B SPA Shipping Tanks (MF-2759A, MF-2759B). Each tank has an internal steam heater to maintain SPA shipping temperatures about 190F.

    - From the A and B Shipping Tanks (MF-2759A, MF-2759B), SPA product is loaded into railcars.

G. Alternate SPA Flow Configuration

Note: The Facility has the capability to route around all tanks and equipment within the SPA process on a temporary basis, except for the following units:

- C Evaporator
- SPA Filter Feed Tank
- SPA Filter Press
- SPA Re-pulp Sump
- SPA Sludge Tank
- SPA Filtrate Receiver Tank

V. Configuration Equipment Designations

A. Upstream Operations Units

The following processes, tanks, and associated equipment used in the production, concentration, transport, and storage of 28% and 44% phosphoric acid, and the concentration of 44% phosphoric acid to 54% phosphoric acid, serve only Upstream Operations:

1. Tanks

a. Reaction System

i. #1 Reactor (MR-1202)

ii. #1 Reactor Seal Water Tank (MS-1218)

iii. #1 Reactor Filter Feed Tank (MF-1203)

iv. #1 Reactor Vacuum System (MF-1208, MS-1205, PE-1204, MS-1206, PV-1205)

v. #2 Reactor (MR-1252)

vi. #2 Reactor Filter Feed Tank (MF-1253)

vii. #2 Reactor Vacuum System (MS-1258, MS-1255, PE-1254, MS-1256, PV-1255)

b. Filtration System

i. #1 Filter Table (GF-1301)

ii. #1 Filter Filtrate Separator (MS-1301)

iii. #1 Filter #1 Filtrate Box (MS-1308)

iv. #1 Filter #2 Filtrate Box (MS-1309)

v. #1 Filter Table Acid Trap Tank (MS-1305)

vi. #1 Filter Gypsum Slurry Tank (MS-1303)

vii. #1 Filter Wash Water Tank (MS-1307)

viii. #1 Filter Vacuum System (GK-1302, MS-1302, PV-1302)

ix. Wash Water Heater (TT-1303)

x. #2 Filter Table (GF-6301)

xi. #2 Filter Filtrate Separator (MS-6301)

xii. #2 Filter #1 Filtrate Box (MS-6308)

xiii. #2 Filter #2 Filtrate Box (MS-6309)

xiv. #2 Filter Separator Seal Tank (MS-6310)

xv. #2 Filter Gypsum Slurry Tank (MS-6303)

xvi. #2 Filter Wash Water Tank (MS-6307)

xvii. #2 Filter Wash Water Heater (TT-6303)

xviii. #2 Filter Vacuum System (GK-6302, MS-6302, PV-6302)

xix. #3 Filter Table (GF-6351)

xx. #3 Filter Filtrate Separator (MS-6351)

xxi. #3 Filter #1 Filtrate Pump Box (MS-6358)

xxii. #3 Filter #2 Filtrate Pump Box (MS-6359)

xxiii. #3 Filter Separator Seal Tank (MS-6350)

xxiv. #3 Filter Gypsum Slurry Tank (MS-6353)

xxv. #3 Filter Wash Water Tank (MS-6357)

xxvi. #3 Filter Vacuum System (GK-6352, MS-6352, PV-6355)

xxvii. Blend Tank (MF-1251)

c. Clarification and Storage of 28% Phosphoric Acid

i. 28% Clarifier (MF-1501)

ii. #2 28% Clarifier (MF-1503)

iii. 28% Storage Tank (MF-1502)

iv. #2 28% Storage Tank (MF-1514)

v. #3 28% Storage Tank (MF-1504)

vi. #1 28% Clarifier Wash Box (MS-1505)

vii. #2 28% Clarifier Wash Box (MS-1506)

d. Concentration of 28% Phosphoric Acid to 44% Phosphoric Acid

i. A Evaporator (GE-1402A)

ii. A Evaporator Heat Exchanger (TT-1401)

iii. A Evaporator Barometric Condenser (PE-1409A)

iv. A Evaporator Ejector System (PE-1410A, PE-1411A, PE-1412A)

v. B Evaporator (GE-1402B)

vi. B Evaporator Heat Exchanger (TT-1402)

vii. B Evaporator Barometric Condenser (PE-1409B)

viii. B Evaporator Ejector System (PE-1410B, PE-1411B, PE-1412B)

ix. A/B Evaporator Condenser Hotwell (MS-1408)

x. Cooling Water Sump (MT-1308)

e. Clarification of 44% Phosphoric Acid

i. 44% Clarifier Tank (MF-6551)

ii. 44% Clarifier Wash Box (MS-6553)

f. Concentration of 44% Phosphoric Acid to 54% Phosphoric Acid

i. D Evaporator (GE-6401)

ii. D Evaporator Heat Exchanger (TT-6401)

iii. D Evaporator Barometric Condenser (PE-6409)

iv. D Evaporator Ejector System (PE-6410, PE-6411, PE-6412)

v. D Evaporator Hotwell (MS-6408)

vi. D Evaporator Condenser Water Heat Exchanger (TT-6404)

vii. D Evaporator Fluoride Recovery Tower (MF-6404)

viii. D Evaporator FSA Recirculation Tank (MS-6406)

ix. D Evaporator Secondary FSA Recirculation Tank (MS-6416)

x. E Evaporator (GE-1450)

xi. E Evaporator Heat Exchanger (TT-1451)

xii. E Evaporator Barometric Condenser (PE-1459)

xiii. E Evaporator Ejector System (PE-1451, PE-1452, PE-1453)

xiv. E Evaporator Hotwell (MS-1458)

xv. E Evaporator Fluoride Recovery Tower (MF-1451)

xvi. E Evaporator FSA Recirculation Tank (MS-1456)

g. Clarification of 54% Phosphoric Acid

i. 54% Clarifier Tank (MF-6503)

ii. 54% Clarifier Wash Box (MS-6506)

2. Transfer Lines

All lines connecting the equipment listed above are considered Upstream Operations.

3. Air Pollution Control Devices (APCD)

a. C Fume Scrubber System

The C Fume Scrubber System circulates process water to scrub fumes from specific units within the phosphoric acid process ("Phosphoric Acid Process") and the FSA process ("FSA Process"). Make-up to the system is provided by tailings water or D Cooling Pond Water. Blowdown from the system is sent to the Phosphogypsum Stack System or sent to the Badger Fume Scrubber System as make-up.

The following equipment comprises the C Fume Scrubber System:

i. Fume Scrubber C with Separator (GK-6304)

ii. Fume Scrubber C Seal Tank (MS-6304)

iii. Fume Scrubber Fan C (PB-6306)

iv. Fume Stack C (HC-6301)

v. FSR Sump (J-6301)

The C Fume Scrubber System evacuates fumes from the following processes, tanks, and associated equipment in the Phosphoric Acid Plant:

Name	Asset #	Designation
#2 Filter Table	GF-6301	Upstream
FSR Water Collection Sump	J-6301	APCD System
#2 Acid Sump	J-6302	Upstream
D/E Evaporator Sump	J-6401	Upstream
E Evaporator FSA Recirculation Tank	MS-1456	Upstream
E Evaporator Hotwell	MS-1458	Upstream
#2 Filter Vacuum Scrubber Seal Tank	MS-6302	Upstream
#2 Filter Gypsum Slurry Tank	MS-6303	Upstream
Fume Scrubber C Seal Tank	MS-6304	APCD System
#2 Filter Wash Water Tank	MS-6307	Upstream
D Evaporator FSA Recirculation Tank	MS-6406	Upstream
D Evaporator Hotwell	MS-6408	Upstream
D Evaporator Secondary FSA Recirculation Tank	MS-6416	Upstream

B. Mixed-Use Units

The following processes, tanks, and associated equipment in the Phosphoric Acid Plant are Mixed-Use Units:

1. Tanks
   a. 44% Storage Tank (MF-6552)
   b. 54% Storage Tank (MF-6504)
   c. 54% Shipping Clarifier (MF-1507)
   d. Sludge Pre-Mix Tank (MF-1509)
   e. 44% / 54% Sludge Tank (MF-6508)
2. Transfer Lines
   a. 44% Transfer Line(s)
   b. 54% Transfer Line(s)
   c. 44%/54% Sludge Line
3. Air Pollution Control Devices (APCD)
   a. Badger Fume Scrubber System

The Badger Fume Scrubber System circulates process water to scrub fumes from specific units within the Phosphoric Acid Process, the FSA Process, and the SPA process ("SPA Process"). Make-up to the system is provided

by blowdown from the Mustang FSR Sump (J-6301). Blowdown from the system is sent to the Phosphogypsum Stack System or re-used in the Phosphoric Acid Process.

The following equipment comprises the Badger Fume Scrubber System:

i. Fume Scrubber A with Separator (GK-1304A)

ii. Fume Scrubber Seal Tank (MS-1304)

iii. Fume Scrubber Fan A (PB-1306A)

iv. Fume Stack A (HC-1301A)

i. Fume Scrubber B with Separator (GK-1304B)

ii. Fume Scrubber Fan B (PB-1306B)

iii. Fume Stack B (HC-1301B)

iv. FSR Sump (J-1319)

The Badger Fume Scrubber System evacuates fumes from the following processes, tanks, and associated equipment in the Phosphoric Acid Plant:

Name	Asset #	Designation
#1 Filter Table	GF-1301	Upstream
FSR Sump	J-1319	APCD System
Blend Tank	MF-1251	Upstream
#2 Reactor Filter Feed Tank	MF-1253	Upstream
28% Clarifier	MF-1501	Upstream
28% Storage Tank	MF-1502	Upstream
#2 28% Clarifier	MF-1503	Upstream
#3 28% Storage Tank	MF-1504	Upstream
54% Shipping Clarifier	MF-1507	Mixed-Use
Sludge Pre-Mix Tank	MF-1509	Mixed-Use
#2 28% Storage Tank	MF-1514	Upstream
54% Shipping Tank	MF-2503	Downstream
Reactor FSA Circulation Tank	MS-1205	Upstream
#1 Reactor Hot Well	MS-1206	Upstream
#1 Reactor Seal Water Tank	MS-1218	Upstream
#1 Filter Gypsum Slurry Tank	MS-1303	Upstream
#1 Filter Wash Water Tank	MS-1307	Upstream
Tank Farm Collection Tank	MS-1517	Upstream
A/B Evaporator Hotwell	MS-1408	Upstream
FSA Recirculation Tank	MS-1409	Upstream
#2 28% Clarifier Wash Box	MS-1506	Upstream
Wash Box	MS-1510	Upstream
Sludge Pre Mix Tank Wash Box	MS-1512	Mixed-Use
C FSA Recirculation Tank	MS-2706	SPA

Name	Asset #	Designation
C Evaporator Cooler Tank	MS-2711	SPA
SPA Shipping Tank A	MS-2759A	SPA
SPA Shipping Tank B	MS-2759B	SPA
#1 Acid Sump	MT-1311	Upstream
C Evaporator Barometric Sump	MT-2703	SPA

b. D Fume Scrubber System

The D Fume Scrubber System circulates process water to scrub fumes from specific units within the Phosphoric Acid Process and the FSA Process. Make-up to the system is provided by tailings water or D Cooling Pond Water. Blowdown from the system is sent to the Phosphogypsum Stack System or sent to the Badger Fume Scrubber System as make-up.

The following equipment comprises the D Fume Scrubber System:

i. Fume Scrubber with Separator (GK-6354)

ii. Fume Scrubber Seal Tank (MS-6354)

iii. Fume Scrubber Fan (PB-6356)

iv. Fume Stack C (HC-6301)

v. FSR Sump (J-6301)

The D Fume Scrubber System evacuates fumes from the following processes, tanks, and associated equipment in the Phosphoric Acid Plant:

Name	Asset #	Designation
#3 Filter	GF-6351	Upstream
#2 Reactor Acid Sump	J-1251	Upstream
#3 Filter Acid Sump	J-6352	Upstream
#2 Tank Farm Sump	J-6501	Upstream
54% Clarifier	MF-6503	Upstream
54% Storage Tank	MF-6504	Mixed-Use
44% / 54% Sludge Tank	MF-6508	Upstream
44% Clarifier	MF-6551	Upstream
44% Storage Tank	MF-6552	Mixed-Use
#2 Reactor Pre-Condenser Hot Well	MS-1255	Upstream
#2 Reactor Hot Well	MS-1256	Upstream
Vacuum Pump Condenser Seal Tank	MS-6352	Upstream
#3 Filter Gypsum Slurry Tank	MS-6353	Upstream
#3 Filter Wash Water Tank	MS-6357	Upstream
54% Clarifier Wash Box	MS-6506	Upstream
Sludge Tank Wash Box	MS-6511	Upstream
44% Clarifier Wash Box	MS-6553	Upstream

C. SPA Recovery

The following units are associated with the SPA process. The cleaning wastes or other materials from these units will be managed in the Acid Value Recovery System and/or recovered directly in Granulation or other process units as described in Section IV.F.2 of this Facility Report. Two exceptions would be any material that is non-hazardous (such as C evaporator wash material) and the C Evaporator condensate, which will report to the Phosphogypsum Stack System through the phosphoric acid evaporator barometric condenser system.

1. Tanks and Equipment

   a. C Evaporator System

      i. C Evaporator (GE-2701)

      ii. C Startup Tank (MS-2704)

      iii. C Cooler Tank (MS-2711)

      iv. SPA Product Cooler (TT-2703)

      v. C Barometric Condenser System (PE-2714, PE-2706, TT-2708, PE-2722, PE-2705, PE-2707)

      vi. C Fluoride Recovery Tower (MS-2705)

      vii. C FSA Recirculation Tank (MS-2706)

   b. #1 Aging Tank (MF-2788)

   c. #2 Aging Tank (MF-2773)

   d. #3 Aging Tank (MF-2751)

   e. SPA Filter Feed Cooler (TT-2771)

   f. SPA Filter Feed Tank (MS-2711)

   g. SPA Filter (GF-2784)

   h. SPA Re-Pulp Sump (GS-2787)

   i. SPA Filtrate Receiver Tank (MS-2758)

   j. SPA Shipping Tank A (MF-2759A)

   k. SPA Shipping Tank B (MF-2759B)

2. Transfer Lines

    a. C Evaporator Feed Line

    b. Transfer lines from C Evaporator to C Cooler Tank

    c. Transfer lines from C Cooler Tank to SPA Product Cooler

    d. Transfer lines from SPA Product Cooler to SPA Aging Tanks

    e. Transfer lines from SPA Aging Tanks to SPA Filter Feed Cooler

    f. Transfer lines from SPA Filter Feed Cooler to SPA Filter Feed Tank

    g. Transfer lines from SPA Filter Feed Tank to SPA Filter

    h. Transfer lines from SPA Filter to SPA Filtrate Receiver Tank (MS-2758)

    i. Transfer lines from SPA Re-Pulp Sump to SPA Sludge Tank

D. Acid Value Recovery System Units

The following equipment, tanks, and acid transfer lines are identified as Acid Value Recovery Units.

Materials from Acid Value Recovery Units are recovered into Upstream Operations as designated in this Facility Report or to the Acid Value Recovery Tank(s) as described in Section VI (Compliance Projects (Projects 1 and 2)).

The Acid Value Recovery Tank(s) that Simplot will install in accordance with Section VI are also Acid Value Recovery System Units.

1. Tanks / Process Equipment

    a. 54% Shipping Storage Tank (MF-2503)

    b. SPA Sludge Tank (MF-2754)

    c. Granulation Mix Tank (MF-1621)

    d. Granulation Feed Tank (MF-1610)

    e. FSA System

        i. FSA Clarifier #1 (MS-6701)

        ii. FSA Clarifier #2 (MS-6702)

        iii. FSA Clarifier #3 (MS-6703)

iv. FSA Polishing Filter #1 (GF-6701)

v. FSA Polishing Filter #2 (GF-6702)

vi. FSA Storage Tank (MF-6701)

f. Upstream Recovery Units

i. Upstream Recovery Tank(s)

g. Liquid Shipping System

i. Rail Wash / Sump Equipment

2. Transfer Lines

a. #1, #2, #3, #4 Granulation Feed Line(s)

b. Mixed Sludge Line

c. Transfer lines from SPA Sludge Tank to Pre-Mix Tank (MF-1509), the 44%/54% Sludge Tank (MF-6508), #2 Reactor Filter Feed Tank (MF-1253), and to the #1, #2, and # 3 Filter Tables.

d. FSA System

i. Transfer lines from D Evaporator FSA Recirculation Tank (MS-6406, D Evaporator Secondary FSA Recirculation Tank (MS-6416), and E Evaporator FSA Recirculation Tank (MS-1456) to FSA Clarifiers

ii. Transfer lines from FSA Clarifiers to FSA Polishing Filters

iii. Transfer lines from FSA Polishing Filters to FSA Storage Tank

iv. Transfer lines from FSA Storage Tank to Load Out

e. Transfer lines from Upstream Recovery System Units to specific Upstream Units

E. Granulation

The Facility's Granulation process consists of two basic parts: (1) the wet side (e.g., reactor, acid scrubber system); and (2) the dry side (e.g., granulator, dryer).

MAP, 40 Rock, and 16-20-0 manufacturing operations are Downstream Operations; however, the units listed below are Acid Value Recovery Units in wet side service and as such may be recovered in the Acid Value Recovery System.

Cleaning wastes or other materials from the Acid Value Recovery System Units below are recovered into Upstream Operations and/or Granulation operations as

designated in this Facility Report or to the Acid Value Recovery Tank itself as described in Section VI (Compliance Projects (Projects 1 and 2)).

1. Acid Value Recovery System Units

    a. Granulation Mix Tank (MF-1621)

    b. Granulation Feed Tank (MF-1610)

The above two pieces of equipment in the Granulation Plant may also be used as a backup Granulation recovery tank ("Granulation Recovery Tank") as needed. In this situation, the tank will be emptied of its contents and once in service as a Granulation Recovery Tank, the unit will operate in accordance with the Granulation Recovery Tank operation as described in Section VI (Compliance Projects). To return the unit to service as an Acid Value Recovery System Unit, the contents of the tank will be emptied and the tank will be cleaned before being fed its normal contents. After returning the unit to service as an Acid Value Recovery System Unit, cleaning wastes or other materials generated from these tanks will be handled as described in Section VI (Compliance Projects (Projects 1 & 2)).

The following pieces of equipment in the Granulation Plant are Granulation Recovery System Units. Cleaning wastes or other materials from Granulation Recovery System Units are recovered into the Granulation process as designated in this Facility Report or to the Granulation Recovery Tank itself as described in Section VI. Compliance Projects (Projects 3 and 4) of this Facility Report.

1. Granulation Recovery System Units

    a. Granulation Acid Scrubbers

    b. Granulation Reactor

    c. Granulator

    d. Dryer

    e. Cooler

    f. Elevators

    g. Screening and Milling Equipment

    h. Granulation Tail Gas Scrubbers

    i. Acid transfer lines from the Phosphoric Acid Feed Header to the Granulation Plant

j. Acid transfer lines from the Granulation Mix Tank and the Granulation Feed Tank to the Granulation Plant

VI. Compliance Projects

The projects described below are not all the projects listed in Appendix 6 (Compliance Schedule) to the Consent Decree but are the projects that are recovery related – the Acid Value Recovery System and the Granulation Recovery System. The time frames for completion of the projects are found in Appendix 6 (Compliance Schedule).

Projects 1 and 2 comprise a plan that will enable the Facility to clean Upstream Operations, Mixed-Use Units, SPA Recovery Units, and Acid Value Recovery System Units, and recover acid value from the cleaning wastes or other materials as described below.

Projects 3 and 4 are projects related to Granulation and recovery of materials in that process.

A. Acid Value Recovery System Related Projects

The Acid Value Recovery System will enable Simplot to recover the value of cleaning wastes or other materials from pipes, tanks, process equipment, or other storage or transport units that are identified as SPA Recovery Units or Acid Value Recovery System Units in this Facility Report. (See Diagram 1 for an overview of streams handled to and from the Acid Value Recovery Tank(s).) In accordance with Appendix 5.A, the Acid Value Recovery System will enable Simplot to recover spills and leaks in semi-segregable ("Semi-Segregable") and Containable Impervious Areas as described in Section VII: Containment of Phosphoric Acid Production Related Spills and Leaks of this Facility Report. The system will involve instrumentation and lines to allow the recovery of high acid content material from the Semi-Segregable Areas, as well as full recovery from Containable Impervious Areas.

1. Project Descriptions

Project 1: Acid Value Recovery Tank and Wash Solution System in Phosphoric Acid Plant

The Acid Value Recovery Tank and wash solution system project in the Phosphoric Acid Plant will install new tank(s), piping, and controls to enable Simplot to recover the value of cleaning wastes or other materials, as specified in Section VI.A.2 Project Operations below.

Simplot will install two new Acid Value Recovery Tanks for the Acid Value Recovery System. At any one time, one of the tanks may be used in Upstream Operations, Mixed-Use Unit, or other Acid Value Recovery Unit services when not operating as an Acid Value Recovery Tank. After use as an Acid Value Recovery Tank or other Acid Value Recovery Unit, and prior to placing the tank into Upstream Operations or Mixed-Use Unit service, the tank being placed into Upstream Operations or Mixed-Use Unit must be cleaned as

an Acid Value Recovery Unit and any cleaning wastes managed accordingly, after which time, the tank will assume an Upstream Operations designation as defined in paragraph 9 of the Consent Decree. The Acid Value Recovery Tank backup tank(s) will be used during cleaning and/or maintenance of the Acid Value Recovery Tank. Cleaning wastes or other materials from the Acid Value Recovery Tank backup tank will be handled in the same way as the cleaning wastes or other materials from the Acid Value Recovery Tank itself as described in Section VI.A.2 (Project Operations) below.

In addition, new or upgraded pumps, motors, small pump tanks, and instrumentation may be needed to ensure the return of spills and leaks and cleaning wastes or other materials of: (1) phosphoric acid, sulfuric acid, FSA, SACS, SPA Recovery Unit effluent or Acid Value Recovery System effluent; or (2) NHACS, Process Wastewater, or Phosphogypsum Stack System Wastewater when mixed with any of the preceding solutions due to spills, leaks, or cleaning of leaks and spills to the Acid Value Recovery System. Project 1 necessarily coincides with Project 2 below.

Project 2: Recovery System Return Piping

Simplot will install new piping to enable: (1) cleaning of phosphoric acid lines that take materials from the Phosphoric Acid Plant and convey them to Granulation and SPA and then return those cleaning wastes or other materials to the Acid Value Recovery System; (2) cleaning of SPA Recovery Units and Acid Value Recovery Units and return those cleaning wastes or other materials to the Acid Value Recovery System and/or direct them to the Upstream Operations/Mixed-Use Unit operations set forth in VI.A.3 (Acid Value Recovery Options) below; (3) cleaning of the FSA System and return those cleaning wastes or other materials to the Acid Value Recovery System; (4) recovering SPA secondary solids (filter solids) and return those materials to the Acid Value Recovery System, to Upstream Operations/Mixed-Use Unit operations, or directly to Granulation operations; and (5) recovering high acid content material from Semi-Segregable sumps to the Acid Value Recovery Tank and/or to a phosphoric acid storage tank.

2. Project Operations

The Acid Value Recovery System will be comprised of the Acid Value Recovery Tank(s) along with pumps and piping to supply cleaning solution to units that are part of Upstream Operations, or identified as Mixed-Use Units, SPA Recovery Units, or Acid Value Recovery System Units and recover the cleaning wastes or other materials back to the Acid Value Recovery Tank or direct those wastes or other materials to Upstream Operations/Mixed-Use Unit

operations that are considered part of the Acid Value Recovery System as described below.

Prior to cleaning, equipment will be emptied by recovering as much acid as possible back into the Phosphoric Acid, SPA, FSA, or Granulation production processes, which may include final acid draining by opening manways and flowing material across concrete pads to Semi-Segregable or Containable Impervious Sumps.

In accordance with the Consent Decree, the following solutions may be mixed in any combination within the Acid Value Recovery Tank for use in equipment cleaning and subsequent recovery in the Acid Value Recovery System[6]: Phosphogypsum Stack System Wastewater, Process Wastewater, or NHACS mixed with either sulfuric acid, FSA, or phosphoric acid or Acid Value Recovery Tank Effluent.

In accordance with the Consent Decree, the following solutions may be mixed in any combination within SPA equipment for use in equipment cleaning and subsequent recovery in the Acid Value Recovery System[7]: Phosphogypsum Stack System Wastewater, Process Wastewater, or NHACS. These solutions can also be mixed with sulfuric acid, a caustic wash solution, SPA Recovery Unit effluent, or Acid Value Recovery Tank Effluent. The project will also include the development of a dewatering area that is used for mechanically removing solids from units designated as Acid Value Recovery Units and SPA Recovery Units such as pipes, pumps, etc. during repair, maintenance, or turnaround. Solids removal is performed with high pressure cleaning with NHACS or by other mechanical means. If hazardous, pumpable cleaning wastes or other materials (including entrained solids) will be recovered to the Acid Value Recovery System. If non-hazardous, these wastes or other materials can be sent to the Phosphogypsum Stack or recovered within manufacturing operations. Non-pumpable solids, if non-hazardous, will be disposed of in the Phosphogypsum Stack System. If hazardous, these solids will be handled in compliance with RCRA Requirements as defined in Paragraph 9 of the Consent Decree. After cleaning, the equipment is either returned to the plant or disposed of in compliance with applicable law. Units designated as part of Upstream Operations or as Mixed-Use Units may also be cleaned in this area. Wastes or other materials generated from the cleaning of Upstream Operations or Mixed-Use Unit operations can be

[6] If Upstream Operations or Mixed-Use Units are cleaned with Process Wastewater, Phosphogypsum Stack System Wastewater and/or NHACS without the addition of chemicals such as FSA or sulfuric acid, the cleaning wastes or other materials may be discharged to the Phosphogypsum Stack System or used within Upstream Operations.

[7] Caustic wash solution may be sent to the Phosphogypsum Stack System if non-hazardous.

disposed of in the Phosphogypsum Stack System in accordance with Paragraph 17 of the Consent Decree.

3. Acid Value Recovery Options

The Acid Value Recovery System will be engineered to return wastes or other materials generated from cleaning Acid Value Recovery and SPA Recovery Units into Upstream Operations/Mixed-Use Unit operations where their values are recovered or managed through the following (Diagram 2):

a. As a wash on the Phosphogypsum filter, provided that the wash passing through the filter is sent to the phosphoric acid reactor; and/or

b. As direct make up to the phosphoric acid reactors; and/or

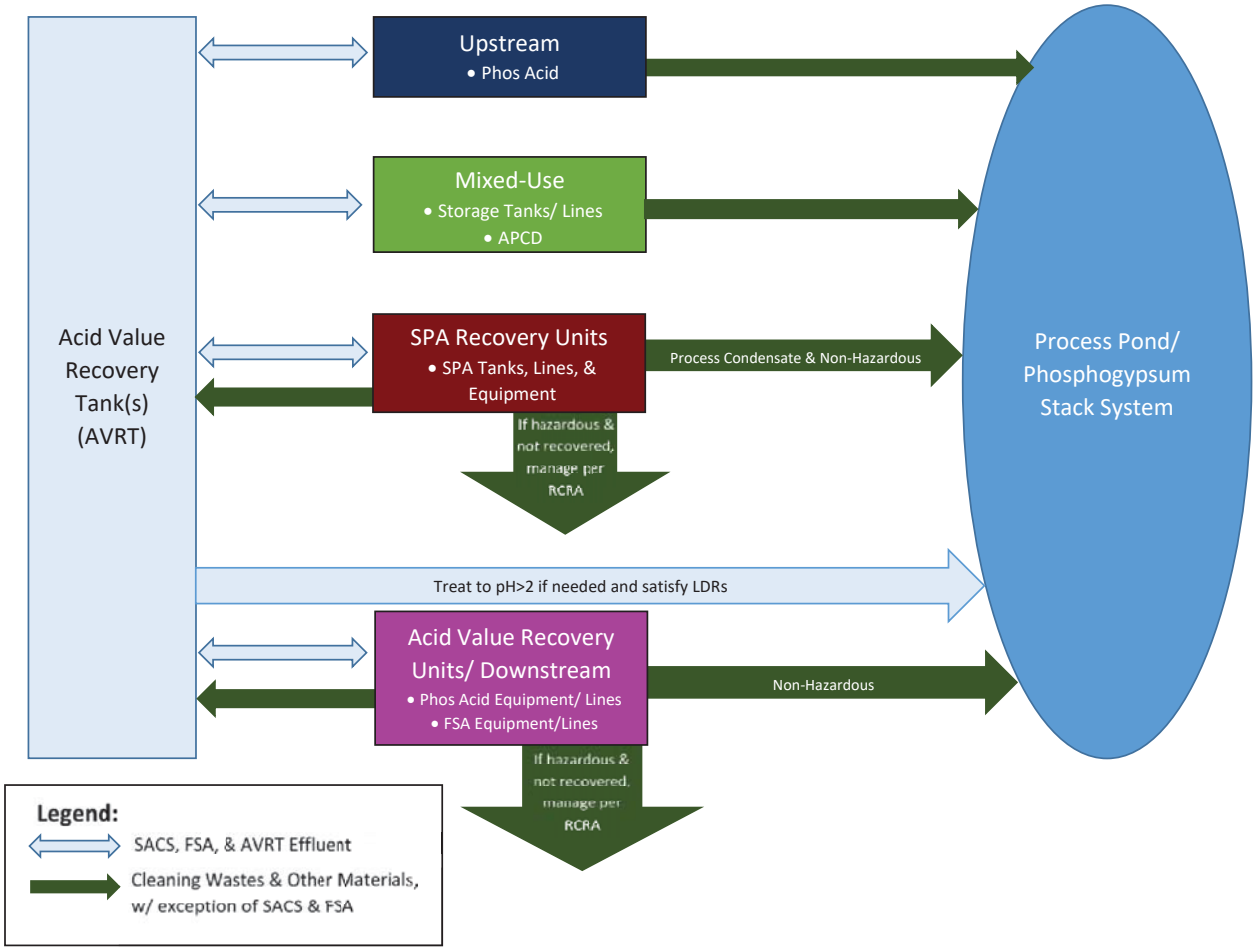
c. Used in a pre-reacted ore process unit, as described in Section VIII(Proposed Phosphoric Acid Production Related Operations).

d. Discharged to the Phosphogypsum Stack System, if in compliance with the LDR standards set forth in 40 C.F.R. Part 268, Subpart D; and/or

e. Placed in the evaporator feed tanks or phosphoric acid storage tanks for recovery, if representative sampling[8] for the stream has shown a P_2O_5 content above 1%.

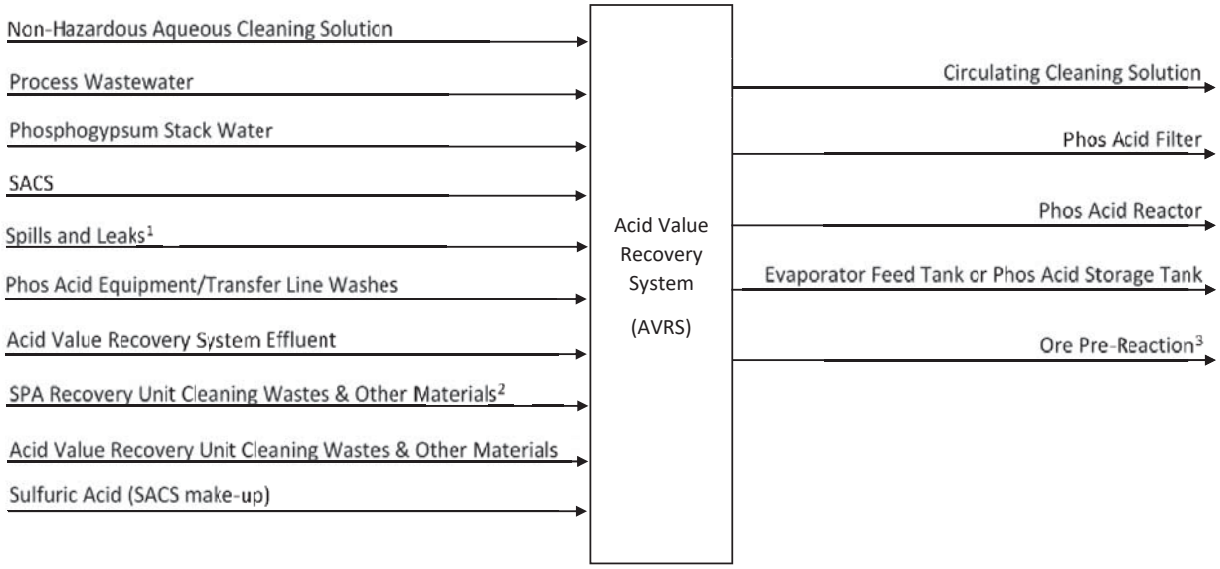
[8] Representative sampling will include quarterly sampling, or sampling at the frequency of generation if cleaning wastes or other materials are generated less than quarterly and may be performed in-house.

Diagram 1. Acid Value Recovery Tank Inputs and Effluents[9]



[9] This diagram is a simplification of the management requirements for the Acid Value Recovery System inputs and effluents. Nothing in this diagram substitutes for or overrides the narrative descriptions in the Facility Report or Appendix 5.A.

Diagram 2. Acid Value Recovery Tank Inputs and Effluents[10]



[1] Spills and leaks include: P_2O_5, H_2SO_4, FSA, and mixtures of the proceeding with Process Wastewater, Phosphogypsum Stack Water, and NHACS
[2] Does not include SPA Process Condensate or non-hazardous wash materials (specifically C Evaporator caustic washes)
[3] Potential Future Project described in Section VIII of the Facility Report

B. Granulation Related Projects

1. Project Descriptions

Project 3. Granulation Recovery System and Wash Solution System in Granulation Plant

Simplot has a Granulation Recovery System for the Granulation Plant installed and operating. The Granulation Recovery System consists of a sump, collection tank, and pumps to transport and recirculate wash solution between the Granulation Recovery System Units, the Granulation Recovery System, and/or consume the wash solution in the Granulation Plant as specified in Section VI.B.2 Project Operations below.

Project 4. Upgrade Granulation Plant Pads and Sumps as Needed

Simplot will modify or install, as needed, containment pads and sumps in the Granulation Plant to improve the capture of spills, leaks, and cleaning solution

[10] This diagram is a simplification of the management requirements for Acid Value Recovery System inputs and effluents. Nothing in this diagram substitutes for or overrides the narrative descriptions in the Facility Report or Appendix 5.A.

so materials may be returned to the Granulation process via the Granulation Recovery System, as identified in the Facility Report.

2. Project Operations

Solutions and solids generated from cleaning Granulation equipment other than Acid Value Recovery System Units as described in the Facility Report will either be recovered in the Granulation process or characterized to determine if they are hazardous under the RCRA Requirements as defined in Paragraph 9 of the Consent Decree for corrosivity (pH equal to or less than 2 or pH equal to or greater than 12.5) and/or toxicity. If they are non-hazardous, then the solids may be transferred to the Phosphogypsum Stack System. The Granulation Recovery System enables Simplot to recover the value of cleaning wastes or other materials generated from the use of SACS, NHACS, Process Wastewater, Phosphogypsum Stack System Wastewater, 54% Phosphoric Acid, or Granulation Recovery System effluent from pipes, tanks, process equipment, or other storage or transport units identified as Granulation Recovery System Units. In accordance with Appendix 5.A, the Granulation Recovery System also enables Simplot to recover spills and leaks in Containable Impervious Areas within the Granulation Plant described in Section VII (Containment of Phosphoric Acid Production Related Spills and Leaks) of this Facility Report.

Granulation dry side equipment, such as the granulator, dryer, cooler, elevators, screens, and milling equipment are cleaned by mechanical means and the material is recovered through the dry reclaim system. High pressure cleaning with NHACS may be used to remove hard scale material and, if hazardous, this material will be recovered to the Granulation Recovery System. If non-hazardous, then this scale material may either be recovered to the Granulation Recovery System or disposed of in the Phosphogypsum Stack System.

NHACS may be used for wash down of the floors, conveyor belts, and other equipment within the Granulation Plant. The resulting streams will be recovered to the Granulation Recovery System. SACS, FSA, Process Wastewater, and Phosphogypsum Stack System Water may not be used to wash down floors within the Granulation Plant.

a. The Granulation Recovery Tank will in turn reuse or recover the recoverable streams as follows:

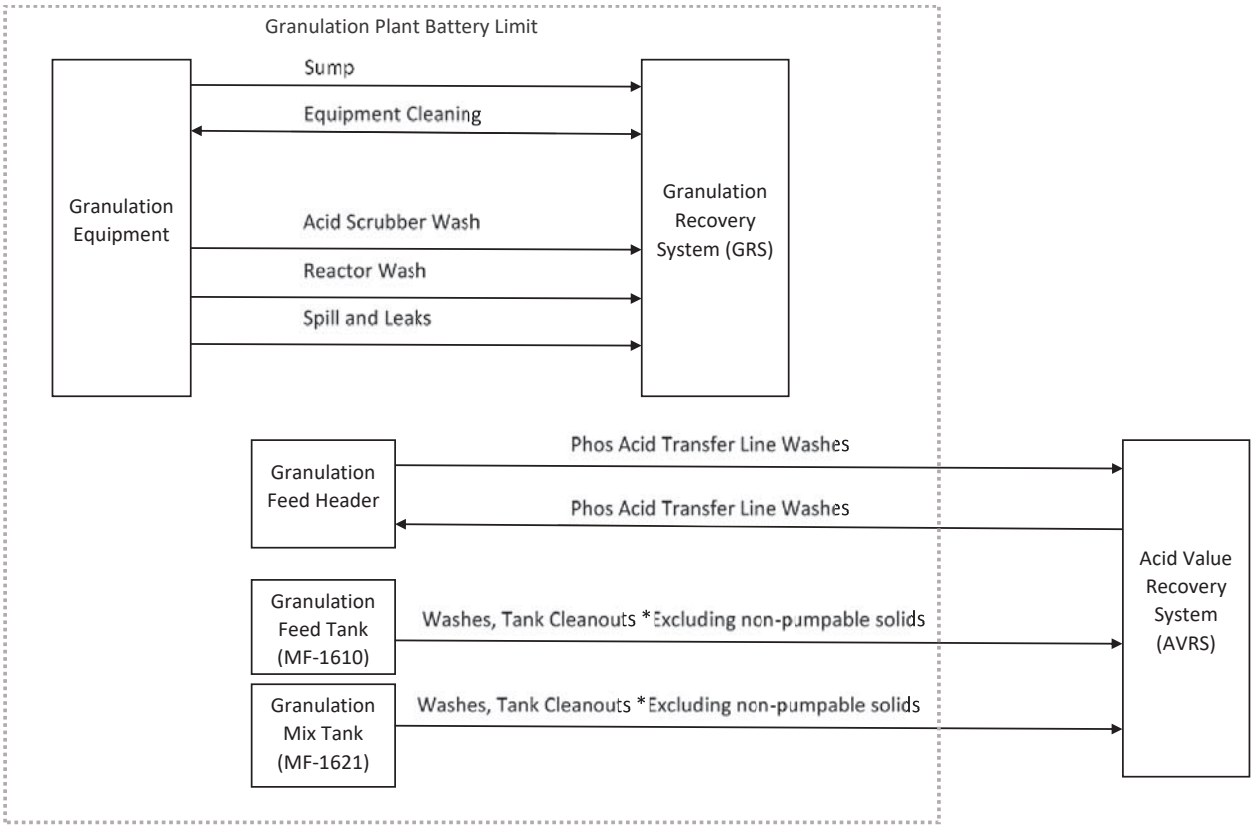
i. Consumed in the acid scrubber system for consumption in the Granulation process; and/or

ii. Consumed in the Granulation reactor; and/or

iii. Recirculated to clean Granulation Recovery System Units.

To clean the Granulation Recovery Tank, Simplot may transfer the contents of the Granulation Recovery Tank to Granulation Plant's Acid Value Recovery System Units described in Section V.E.1 above, as temporary Granulation Recovery Tank(s). The Granulation Recovery Tank will then be washed with a cleaning solution (SACS, Process Wastewater, Phosphogypsum Stack System Wastewater, or NHACS) and the cleaning solution from this cleaning may be recovered to the temporary Granulation Recovery Tank(s), recovered back into Granulation directly, and/or disposed of in accordance with RCRA Requirements.

Diagram 3 – Granulation Plant Equipment and Recovery System Designation along with System Inputs and Effluents[11]



[11] This diagram is a simplification of the management requirements for Granulation Recovery System inputs and effluents. Nothing in this diagram substitutes for or overrides the narrative descriptions in the Facility Report or Appendix 5.

VII. Containment of Phosphoric Acid Production Related Spills and Leaks

A. Non-Segregable Areas (Figure 11)

The concrete pads within the non-segregable areas of the Facility's Phosphoric Acid Plant are sloped towards lined sumps that transport any leaks and spills to the Phosphogypsum Stack System. For the #1, #2, and #3 Acid Sumps, Process Wastewater flows through the sumps at a rate of 300-500 gpm to the HDPE-lined Phosphogypsum Stack System. There are some areas in the Phosphoric Acid Plant area that are not concrete and they are shown with redlines in Figure 12. The non-concrete areas are designated as "other areas" such that spills and leaks in these areas are managed in accordance with RCRA Requirements and any other applicable law.

B. Containable Impervious Areas (Figure 12)

1. SPA Acid and Re-pulp Sump Area
2. SPA Shipping and FSA Area
3. Car Wash Sump Area
4. C Evaporator Area
5. Granulation Plant Area

Spills and leaks of phosphoric acid, sulfuric acid, and FSA onto impervious areas designated by yellow lines in Figure 12 ("containable impervious areas") will be separately contained, and then recovered in accordance with Appendix 5.A. The foregoing does not relieve Simplot of its obligations for any spills and leaks under any applicable law.

C. Semi-Segregable Areas (Figure 13)

1. 44/54 or #2 Tank Farm Area
2. East Phosphoric Acid Pipe rack
3. #1 or Badger Tank Farm Area
4. D/E Evaporator Area

For the Semi-Segregable Area sumps, Process Wastewater has intermittent and unpredictable flows through the sumps at varying rates in the range of several hundred to a few thousand gallons a minute depending upon location and

circumstance. The normal flow path for the sumps in these areas will be to the Phosphogypsum Stack System. Due to the engineered slope of the concrete pad in these areas and the configuration of the Phosphoric Acid Plant, spills and leaks of phosphoric acid, sulfuric acid, SPA, and FSA onto the concrete pad will flow to the sump and mix with the Process Wastewater being pumped from the sump. If high acid content is detected by acid content monitoring instruments, then the entire flow from the sump will be diverted for recovery in accordance with Appendix 5.A (Minimizing and Addressing Spills and Leaks).

D. Other Areas

Any leak or spill of a hazardous material, including phosphoric acid and sulfuric acid, that is not contained within the Containable Impervious Areas, Semi-Segregable Areas, or Non-Segregable Areas of the plant will be managed in accordance with RCRA Requirements and any other applicable law.

VIII. Proposed Phosphoric Acid Production Related Operations

Simplot has advised EPA and WDEQ that it is considering one or more of the following projects at its Rock Springs Facility, but planning has not evolved to where detailed information is available.

A. Upstream Operations Units

The following future installations will be designated as Upstream Units:

[redacted]

Figure 1: [redacted]

B. Mixed-Use Units

The following future installations will be designated as Mixed-Use Units:

[redacted]

C. Partially Upstream Operations, Mixed-Use Units, Acid Value Recovery Units, SPA Recovery Units, and/or Downstream Operations Units

[redacted]

[redacted]

Figure 2: [redacted]

However, the Consent Decree does not bind Simplot to implement the proposed project(s) as depicted in the above figures and diagrams. If Simplot chooses to implement any changes through a different process than any of those depicted in the above figures and diagrams, then the Facility Report will be modified prior to implementation pursuant to Section XVII (Modification) of the Consent Decree, and EPA will determine whether the new process as designed involves Upstream Operations units, Mixed-Use Units, Acid Value Recovery System Units, or Downstream Operations units and amend the Facility Report to memorialize those determinations consistent with the descriptions below. Such determinations will be conditioned upon the new process being built substantially as designed. If the new process deviates from that standard, then EPA will determine whether the new process as built involves Upstream Operations, Mixed-Use Units, Acid Value Recovery System Units, or Downstream Operations and amend the Facility Report to memorialize those determinations consistent with the descriptions above.

IX. Non Phosphoric Acid Production Proposed Project

Simplot has advised EPA that it is considering the following project at its Rock Springs Facility, but planning has not evolved to where detailed information is available. Once Simplot decides to implement this proposed project and the project has identifiable units associated with the process, Simplot should confer with EPA to assign unit designations and modify the Facility Report.

[redacted]

X. Authorized Future Installations

This section applies to future installations that were not considered based on current or proposed projects.

A. Procedure

The projects in (B) below will be deemed Upstream Operations units, Mixed-Use Units, Acid Value Recovery Units or Granulation Recovery Units as applicable, when installed within contained concrete areas and will not require prior approval by EPA provided that:

1. Simplot's Phosphogypsum Stack System is in compliance with the requirements of Appendix 1.B (Phosphogypsum Stack System Construction and Operational Requirements) of the Consent Decree, and that Simplot is in compliance with the Financial Assurance requirements of the Consent Decree (Paragraph 26 and Appendix 2); and

2. Simplot provides EPA with written notice at least ninety (90) Days in advance of the reconfiguration or installation of said project

However, if, as a result of circumstances that require Simplot to install or reconfigure such equipment in less than ninety (90) Days from the time a decision is made to undertake such action, then Simplot will provide written notice to EPA as soon as possible and in all events prior to the installation or reconfiguration of such equipment; and

3. Simplot obtains and/or modifies any permit(s) required by local, state, or federal agencies; and

4. Simplot submits to EPA for approval a modified version of this Facility Report with the changes identified at least sixty (60) Days in advance of the reconfiguration or installation of said project; and

5. If applicable, Simplot submits to EPA for approval any modified section(s) of Appendix 5.A (Minimizing and Addressing Spills and Leaks) at least forty-five (45) Days in advance of the reconfiguration or installation of said project.

B. Future Installations

1. Any existing tank within the battery limits of the Phosphoric Acid Plant (Figure 14) which may or may not be storing phosphoric acid, can be converted to phosphoric acid storage service up to, but excluding, MGA.

Any tank placed into phosphoric acid storage service will be structurally adequate and physically compatible with the contents of the tank.

2. Up to a total of two new phosphoric acid tanks storing First Saleable Product may be added within the battery limits of the Phosphoric Acid Plant (Figure 14), where the stored phosphoric acid product in the new tank(s) will be sent for use in Granulation so long as the new unit performs the same function as the existing Acid Value Recovery System tanks identified in this Facility Report. The installation of more than two such tanks will require advance approval by EPA in order to be considered an Acid Value Recovery Unit.

3. APCDs (scrubbers) may be newly installed, replaced, or modified if they are servicing Upstream Operations or Mixed-Use Units identified in this Facility Report. APCDs may not be reconfigured to service any Downstream Operations or any chemical processes which they are not already serving as identified in this Facility Report.

4. APCDs (scrubbers) may be newly installed, replaced, or modified if they are servicing Acid Value Recovery Units or Downstream Operations units identified in this Facility Report, provided the blowdown from these APCDs is non-hazardous in accordance with RCRA requirements.

5. Phosphoric acid piping systems and underflow piping systems associated with Upstream Operations, Mixed-Use Units, or Acid Value Recovery Units, identified in this Facility Report may be installed, replaced, or modified provided that the replacement or modified systems are located within the battery limits of the Phosphoric Acid Plant (Figure 14) or the tank farms, excluding Granulation, and serve only the phosphoric acid production operations identified in this Facility Report for those Upstream Operations, Mixed-Use Units or Acid Value Recovery Units.

XI. Alternate Equipment Name Reference Tables

Tank/Equipment Name	Tank No.	Type of Service Phos Acid (%) or Other	Alternate Name(s)
#1 Reactor	MR-1202	28	Isothermal Reactor
#1 Reactor Seal Water Tank	MS-1218	Process Water	Reactor Seal Water Tank or
#1 Reactor Filter Feed Tank	MF-1203	28	None
#2 Reactor	MR-1252	28	No. 2 Isothermal Reactor
#2 Reactor Filter Feed Tank	MF-1253	28	None
#1 Filter Table	GF-1301	28	#1 Filter or Badger Filter
#1 Filter Filtrate Separator	MS-1301	28	#1 Fish Tank or Badger Filter Filtrate Separator or Badger Fish Tank
#1 Filter #1 Filtrate Box	MS-1308	28	Badger Filter #1 Filtrate Box
#1 Filter #2 Filtrate Box	MS-1309	Process Water	Badger Filter #2 Filtrate Box
#1 Filter Table Acid Trap Tank	MS-1305	28	#1 Filter Table Acid Trap Seal Tank or Seal Pot or #1 Filter Table Separator Seal Tank or Badger Filter Acid Trap Tank
#1 Filter Gypsum Slurry Tank	MS-1303	Gypsum Slurry	#1 Gyp Tank or Badger Gyp Tank
#1 Filter Wash Water Tank	MS-1307	Process Water	Badger Filter Wash Water Tank
Wash Water Heater	TT-1303	Process Water	Badger Wash Water Heater
#2 Filter Table	GF-6301	28	#2 Filter or Mustang Filter
#2 Filter Filtrate Separator	MS-6301	28	#2 Fish Tank or Mustang Filter Filtrate Separator or Mustang Fish Tank
#2 Filter #1 Filtrate Box	MS-6308	28	Mustang Filter #1 Filtrate Box
#2 Filter #2 Filtrate Box	MS-6309	Process Water	Mustang Filter #2 Filtrate Box
#2 Filter Separator Seal Tank	MS-6310	28	#2 Filter Table Acid Trap Seal Tank or Seal Pot or #2 Filter Table Acid Trap Tank or Mustang Filter Separator Seal Tank
#2 Filter Gypsum Slurry Tank	MS-6303	Gypsum Slurry	#2 Gyp Tank or Mustang Gyp Tank
#2 Filter Wash Water Tank	MS-6307	Process Water	Mustang Filter Wash Water Tank

Tank/Equipment Name	Tank No.	Type of Service Phos Acid (%) or Other	Alternate Name(s)
#2 Filter Wash Water Heater	TT-6303	Process Water	Mustang Filter Wash Water Heater
#3 Filter Table	GF-6351	28	Hatch Filter
#3 Filter Filtrate Separator	MS-6351	28	#3 Fish Tank or Hatch Fish Tank
#3 Filter #1 Filtrate Pump Box	MS-6358	28	Hatch Filter #1 Filtrate Pump Box
#3 Filter #2 Filtrate Pump Box	MS-6359	Process Water	Hatch Filter #2 Filtrate Pump Box
#3 Filter Separator Seal Tank	MS-6350	28	#3 Filter Table Acid Trap Seal Tank or Seal Pot or #3 Filter Table Acid Trap Tank or Hatch Filter Separator Seal Tank
#3 Filter Gypsum Slurry Tank	MS-6353	Gypsum Slurry	#3 Gyp Tank or Hatch Gyp Tank
#3 Filter Wash Water Tank	MS-6357	Process Water	Hatch Filter Wash Water Tank
Blend Tank	MF-1251	Process Water	Pond Water Blend Tank
#1 28% Clarifier	MF-1501	28	Old 28% Clarifier or 28% Clarifier
#2 28% Clarifier	MF-1503	28	New 28% Clarifier
#1 28% Storage Tank	MF-1502	28	Old 28% Storage Tank or 28% Storage Tank
#2 28% Storage Tank	MF-1514	28	New 28% Storage Tank
#3 28% Storage Tank	MF-1504	28	None
#1 28% Clarifier Wash Box	MS-1505	28, 44, Equipment Washes	None
#2 28% Clarifier Wash Box	MS-1506	28, 44, Equipment Washes	None
A Evaporator	GE-1402A	28, 44, 54	None
A Evaporator Heat Exchanger	TT-1401	28, 44, 54	A Evaporator Tube Bundle
A Evaporator Barometric Condenser	PE-1409A	Process Water	A Barometric
A Evaporator Ejector System	PE-1410A, PE-1411A, PE-1412A	Process Water, Steam	None
B Evaporator	GE-1402B	28, 44, 54	None

Tank/Equipment Name	Tank No.	Type of Service Phos Acid (%) or Other	Alternate Name(s)
B Evaporator Heat Exchanger	TT-1402	28, 44, 54	B Evaporator Tube Bundle
B Evaporator Barometric Condenser	PE-1409B	Process Water	B Barometric
B Evaporator Ejector System	PE-1410B, PE-1411B, PE-1412B	Process Water, Steam	None
A/B Evaporator Condenser Hotwell	MS-1408	Process Water	A & B Evaporator Hotwell or A/B Evaporator Hotwell
Cooling Water Sump	MT-1308	Process Water	A & B Evaporator Barometric Sump
Tank Farm Collection Tank	MS-1517	Process Water	Old A & B Evaporator FSA Recirculation Tank or Badger Tank Farm Collection Tank
44% Clarifier Tank	MF-6551	44	44% Clarifier
44%/54% Sludge Tank	MF-6508	44/54 Sludge	Mustang Sludge Tank or 44/54 Sludge Tank
44% Clarifier Wash Box	MS-6553	44, 54, Equipment Washes	None
D Evaporator	GE-6401	28, 44, 54	None
D Evaporator Heat Exchanger	TT-6401	28, 44, 54	D Evaporator Tube Bundle
D Evaporator Barometric Condenser	PE-6409	Process Water	D Evaporator Barometric
D Evaporator Ejector System	PE-6410, PE-6411, PE-6412	Process Water, Steam	None
D Evaporator Hotwell	MS-6408	Process Water	None
D Evaporator Condenser Water Heat Exchanger	TT-6404	Process Water	D Evaporator Plate and Frame
D Evaporator Fluoride Recovery Tower	MF-6404	Process Water	D Evaporator FSA Recovery Tower or D FSA Scrubber Vessel
D Evaporator FSA Recirculation Tank	MS-6406	Process Water	D Evaporator FSA Primary Tank
D Evaporator Secondary FSA Recirculation Tank	MS-6416	Process Water	D Evaporator FSA Secondary Tank
E Evaporator	GE-1450	28, 44, 54	None
E Evaporator Heat Exchanger	TT-1451	28, 44, 54	E Evaporator Tube Bundle
E Evaporator Barometric Condenser	PE-1459	Process Water	E Evaporator Barometric

Tank/Equipment Name	Tank No.	Type of Service Phos Acid (%) or Other	Alternate Name(s)
E Evaporator Ejector System	PE-1451, PE-1452, PE-1453	Process Water, Steam	None
E Evaporator Hotwell	MS-1458	Process Water	None
E Evaporator Fluoride Recovery Tower	MF-1451	Process Water	E Evaporator FSA Recovery Tower or E FSA Scrubber
E Evaporator FSA Recirculation Tank	MS-1456	Process Water	E Evaporator FSA Tank
54% Clarifier Tank	MF-6503	54	54% Clarifier
54% Clarifier Wash Box	MS-6506	44, 54, Equipment Washes	None
44% Storage Tank	MF-6552	44	None
54% Storage Tank	MF-6504	54	None
54% Shipping Clarifier	MF-1507	54	52% Cold Clarifier
Sludge Pre-Mix Tank	MF-1509	44/54/SPA Sludge	Pre-Mix Tank
Badger Fume Scrubber System	GK-1304A, GK-1304B	Fumes & Process Water	A&B Fume Scrubber System or Badger Building (area) Fume Scrubber System or Badger FSR Scrubber
C Fume Scrubber System	GK-6304	Fumes & Process Water	Mustang Building (area) Fume Scrubber System or Mustang Fume Scrubber System or Mustang FSR Scrubber
D Fume Scrubber System	GK-6354	Fumes & Process Water	Hatch Building (area) Fume Scrubber System or Hatch Fume Scrubber System
C Evaporator	GE-2701	44, 54, 69	SPA Evaporator
C Startup Tank	MS-2704	NHACS	C Wash Startup Tank
C Evaporator Cooler Tank	MS-2711	69	C Cooler Tank
SPA Product Cooler	TT-2703	69	None
C Fluoride Recovery Tower	MS-2705	SPA Process Condensate	C FSA Recovery Tower
C FSA Recirculation Tank	MS-2706	SPA Process Condensate	C FSA Tank or C FSA Scrubber Tank
#1 Aging Tank	MF-2788	69	None
#2 Aging Tank	MF-2773	69	None

Tank/Equipment Name	Tank No.	Type of Service Phos Acid (%) or Other	Alternate Name(s)
#3 Aging Tank	MF-2751	69	None
SPA Filter Feed Cooler	TT-2771	69	None
SPA Filter Feed Tank	MS-2711	69	Filter Feed Tank
SPA Filter Press	GF-2784	69	Filter Press or SPA Filter
SPA Re-Pulp Sump	GS-2787	SPA Sludge	Re-Pulp Sump
SPA Filtrate Receiver Tank	MS-2758	69	Receiver Tank
SPA Shipping Tank A	MF-2759A	69	A Tank
SPA Shipping Tank B	MF-2759B	69	B Tank
54% Shipping Storage Tank	MF-2503	54	52% Cold Storage or 54% Shipping Tank
SPA Sludge Tank	MF-2754	SPA Sludge	Sludge Tank
Granulation Mix Tank	MF-1621	44/54/SPA Sludge	Mix Tank
Granulation Feed Tank	MF-1610	44/54/SPA Sludge	Sludge Feed Tank
FSA Clarifier #1	MS-6701	FSA	FSA Settling Tank #1
FSA Clarifier #2	MS-6702	FSA	FSA Settling Tank #2
FSA Clarifier #3	MS-6703	FSA	FSA Settling Tank #3
FSA Polishing Filter #1	GF-6701	FSA	FSA Filter or FSA Product Filter
FSA Polishing Filter #2	GF-6702	FSA	FSA Filter or FSA Product Filter
FSA Storage Tank	MF-6701	FSA	FSA Product Tank

Line Name	Phos Acid Service (%)	From	To	Alternate Name(s)
#1, #2, #3, #4 Granulation Feed Line(s)	44, 54	44% Transfer Line(s) and/or 54% Transfer Line(s)	Granulation	#1, #2, #3, #4 Granulation Transfer Line(s) or 44 & 54 Feed Lines
Mixed Sludge Line	44/54/SPA Sludge	Pre-Mix Tank or 44%/54% Sludge Line	Granulation	1510 Line

Line Name	Phos Acid Service (%)	From	To	Alternate Name(s)
44% Transfer Line(s)	44	44% Storage Tank	#1, #2, #3, #4 Granulation Feed Line(s); C Evaporator Feed Line; A,B,D,E Evaporators	None
54% Transfer Line(s)	54	54% Storage Tank	#1, #2, #3, #4 Granulation Feed Line(s); C Evaporator Feed Line; 54% Shipping Clarifier; D, E Evaporators	None
44%/54% Sludge Line	44/54/SPA Sludge	44%/54% Sludge Tank	Pre-Mix Tank or Mixed Sludge Line	6509 Line or 44/54 Sludge Line
C Evaporator Feed Line	44 or 54	44% Transfer Line(s) and/or 54% Transfer Line(s)	C Evaporator	None
C Cooler Tank to SPA Product Cooler Line	69	C Evaporator	SPA Product Cooler	None
SPA Product Line	69	SPA Product Cooler	SPA Aging Tank	69 Product Line
SPA Aging Tank to SPA Filter Feed Cooler Line	69	#3 Aging Tank	Filter Feed Cooler	None
SPA Filter Feed Line	69	SPA Filter Feed Tank	SPA Filter	None
SPA Re-Pulp Sump to SPA Sludge Tank Line	SPA Sludge	SPA Re-Pulp Sump	SPA Sludge Tank	None
SPA Sludge Line	SPA Sludge	SPA Sludge Tank	Pre-Mix Tank or 44%/54% Sludge Tank or #2 Filter Feed Tank or #1, #2, or #3 Filter Tables	None
FSA Clarifier(s) Feed Line(s)	FSA	D Evaporator FSA Recirculation Tank, or D Evaporator Secondary FSA Recirculation Tank, or E Evaporator FSA Recirculation Tank	FSA Clarifiers	None
FSA Polishing Filter Feed Line(s)	FSA	FSA Clarifier(s)	FSA Polishing Filter(s)	None

Line Name	Phos Acid Service (%)	From	To	Alternate Name(s)
FSA Product to Storage Line(s)	FSA	FSA Polishing Filter(s)	FSA Storage Tank	None
FSA Load Out Line	FSA	FSA Storage Tank	FSA Load Out	None

Sump Name	No.	Area serviced	Pumped To	Alternate Name(s)
#1 Acid Sump	MT-1311	#1 Reactor/#1 Filter Table	#1 Gyp Tank	Badger Acid Sump
#2 Acid Sump	J-6302	#2 Filter Table	#2 Gyp Tank or #3 Gyp Tank	Mustang Acid Sump
#3 Acid Sump	J-6352	#3 Filter Table	#3 Gyp Tank	Hatch Acid Sump or #3 Filter Acid Sump
54 Pad Sump	J-6501	44 Clarifier/Storage, 54 Clarifier/Storage	#2 or #3 Gyp Tank	#2 Tank Farm Sump or 54 Area Sump or 44/54 Area Sump
New Reactor Sump	J-1251	#2 Reactor	#2 Gyp Tank	#2 Reactor Sump or #2 Reactor Acid Sump
#1 Tank Farm Sump	MT-1315	Tank Farm/ Blend Tank/ A&B Evaporators	Tank Farm Collection Tank or Directly to Phosphogypsum Stack System	Badger Tank Farm Sump
D Acid Sump	J-6401	D Evaporator/ E Evaporator	#2 Gyp Tank	D/E Evaporator Area Acid Sump or D/E Evaporator Sump
SPA Acid Sump	GS-2787	SPA Aging/ MGO Filtration	SPA Sludge Tank	Re-Pulp Sump
Car Wash Sump	MF-2504	Rail Car Wash/ Load Out	28% Clarifier Wash Box	Acid Load-Out Sump
Granulation Sump	MF-1623	Granulation	Use within Granulation Plant	MAP/DAP Sump

Appendix: Figures and Tables