Appendix 1

Operating and Closure Requirements

APPENDIX 1.A: GROUNDWATER REQUIREMENTS

I. Groundwater Monitoring Plan Requirements

(1) Prior to the Effective Date, Simplot prepared a comprehensive Groundwater monitoring plan (Formation Environmental, Groundwater Monitoring Plan, April 2016), and investigated Groundwater conditions. (Formation Environmental, Groundwater Investigation Summary Report, April 2016).

(2) Simplot shall comply with this Section I (Groundwater Monitoring Plan Requirements) unless a Wyoming DEQ or EPA issued permit or order contains an approved Groundwater monitoring plan or there exists another Groundwater monitoring plan that satisfies the requirements of this Section that has already been approved by Wyoming DEQ and/or EPA.

(3) Prior to the Effective Date, Wyoming DEQ approved Simplot's Wyoming Water Quality Application for a Chapter 3 Permit to Construct (App. No 18-365) on October 11, 2018 and issued Permit No. 18-365 on February 4, 2019, which includes an approved Groundwater monitoring plan (Formation Environmental, Groundwater Monitoring Plan, October 2018) (Attachment A hereto) that serves as compliance with this Section I (Groundwater Monitoring Plan Requirements) and will be updated as necessary.

(4) Monitoring Plan Requirements.

(a) Using pertinent information (including the examples listed from (b)(i) through (xiii) below), Simplot shall provide EPA with a plan containing findings and recommendations for Groundwater monitoring derived from site-specific information. The Groundwater monitoring plan shall be signed and sealed by the professional geologist or professional engineer who prepared or approved it. The plan shall show the locations of the proposed Background and downgradient monitoring wells, construction details of the monitoring wells, and a water sampling and chemical analysis protocol. The plan shall indicate how to determine Background or (where available) Groundwater quality in the vicinity of the site and any deviations in the quality of the receiving Groundwater in the downgradient monitoring wells, except in cases where Background levels are already established and agreed upon by Wyoming DEQ and/or EPA. EPA will evaluate the adequacy of the plan upon submittal.

(b) The following information is generally required unless otherwise specified by EPA:

(i) Hydrogeological, physical and chemical data for the Facility, such as:

1. Direction and rate of Groundwater flow, and Background Groundwater quality (all field verified) where available;

2. Porosity, horizontal and vertical permeability for the Aquifer(s)[1];

3. The depth to, and lithology of, the first confining bed(s);

4. Vertical permeability, thickness, and extent of any confining beds;

5. Topography, soil information and Surface Water of the State drainage systems surrounding the Facility;

6. Geophysical methods (as appropriate) such as ground penetrating radar surveys.

(ii) Disposal rate and frequency, chemical composition, method of discharge, pond volume, spray-field dimension, or other applicable Facility specific information;

(iii) Toxicity of waste;

(iv) Present and anticipated discharge volume and seepage rate to the receiving Groundwater; and physical and chemical characteristics of the Leachate;

(v) Phosphogypsum Stack System water balance;

(vi) Other pollution sources located within one-mile radius of the Facility about which Simplot has information or knowledge;

(vii) Inventory depth, construction details, and cones of depression of water supply wells or well fields and monitoring wells located within one-mile radius of the Facility or potentially affected by the discharge;

(viii) Facility specific economic and feasibility considerations;

(ix) Chronological information on water levels in the monitoring wells and water quality data on water samples collected from the water supply and monitoring wells;

(x) Type and number of waste disposal/waste storage facilities within the Facility;

(xi) Chronological information on Surface Water of the State flows and water quality upstream and downstream from the Facility;

(xii) Construction and operation details of waste disposal/waste storage facilities;

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[1] "Aquifer" means "a zone, stratum or group of strata that can store and transmit water in sufficient quantities for a specific use." Wyoming Administrative Code. 020.0011.8, Section 2(a).

(xiii) Relevant land use history of construction and land development adjacent to the Facility.

(5) Monitoring Wells.

(a) Location of Monitoring Wells to Detect Migration of Contaminants. Unless Simplot can demonstrate that detection can be obtained by a methodology other than the use of monitoring wells, wells shall be located as required and installed pursuant to the 3013 Order and Wyoming Permit No 18-365 by Rule.

II. Groundwater Monitoring, Reporting, and Assessment

(1) Monitoring and Reporting:

(a) On a semi-annual basis, Simplot shall submit Groundwater monitoring data to EPA from all monitoring wells following the receipt of laboratory results.

(b) The reports must also include:

(i) Monitoring well location, construction, and the collection and testing of samples; and
(ii) Groundwater monitoring data displayed in graphic form for analyzing trends in water quality.

(2) Assessment: Simplot shall notify Wyoming DEQ and EPA of any Groundwater quality exceedance as described at Section 6(b)(i)(E)(VII), Chapter 3 Industrial Landfills, Wyoming Environmental Quality Act, W.S. 35-11-101 *et seq*.

(3) When requested by Wyoming DEQ and/or EPA, Simplot shall inform Wyoming DEQ and/or EPA of the next sampling schedule so that a representative of either Agency may be present.

III. Groundwater Corrective Action Work

(1) The State of Wyoming is authorized to oversee any needed Groundwater corrective action. Pursuant to Paragraph 82 of the Consent Decree, and Section II (Groundwater Monitoring, Reporting and Assessment Requirements), EPA reserves the right to directly enforce RCRA 3008(h) if Groundwater monitoring confirms any Groundwater quality exceedance as described at Section 6(b)(i)(E)(VII), Chapter 3 Industrial Landfills, Wyoming Environmental Quality Act, W.S. 35-11-101 *et seq*., or if there is an increase in contaminant concentration (including corrosivity) which EPA or Wyoming DEQ determines constitutes an imminent and substantial endangerment to human health and/or the environment.

(2) If Corrective Action Work is required, Simplot shall submit a plan for proposed Corrective Action Work ("Corrective Action Plan"), within ninety (90) days of receiving notification of Wyoming DEQ's or EPA's determination, that addresses, at a minimum, the following factors:

(a) Direction of the plume movement in relationship to existing and potential sources of drinking water;

(b) Plume size both in the aerial and vertical dimensions;

(c) Rate of migration of the plume;

(d) Concentrations of contaminants of/in the plume;

(e) Rate at which the plume is being attenuated;

(f) Current and projected future use of adjacent ground and Surface Waters of the State affected by the plume;

(g) A detailed description of the activities that are proposed to be taken to prevent further migration of the plume and to clean-up the contamination or release.

(h) The costs of Corrective Action Work; and

(i) A comparison of the clean up or other Corrective Action Work costs with the benefits to the public of such Corrective Action Work.

(3) Simplot will provide within thirty (30) days, if requested by Wyoming DEQ or EPA, any additional information or data needed to aid Wyoming DEQ or EPA in making its Corrective Action Work assessment.

(4) After Simplot submits the Corrective Action Plan, and the Corrective Action Plan is approved by Wyoming DEQ or EPA, Simplot shall perform Corrective Action Work in accordance with the Corrective Action Plan.

(5) Within thirty (30) days after completing the Corrective Action Work in accordance with the Corrective Action Plan, Simplot shall submit to Wyoming DEQ or EPA a report evaluating the effectiveness of the Corrective Action Work along with a certification that Simplot has completed the Corrective Action Work.

GROUNDWATER MONITORING PLAN

Simplot Phosphates, LLC

Rock Springs, Wyoming

October 2018

Prepared for:

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GROUNDWATER MONITORING PLAN

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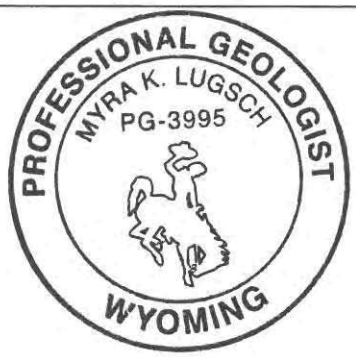

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1.0 INTRODUCTION

This document presents the groundwater monitoring plan for the Simplot Phosphates, LLC (Simplot), phosphate plant near Rock Springs, Wyoming. Groundwater monitoring has been required at the gypsum storage facility (gypsum stack) since its construction in 1986 as a condition of the Permit to Construct (PTC) issued by the Wyoming Department of Environmental Quality (WDEQ) Water Quality Division (WDEQ 1985). This plan provides for groundwater monitoring that is consistent with the most recent version of the PTC (Permit No. 06-606, October 2006 with subsequent extensions) (WDEQ 2006) and Chapter 3 Section 17(d) of the WDEQ Water Quality Rules and Regulations (WDEQ 2012). The plan also incorporates commitments made to the U.S. Environmental Protection Agency (EPA) under the Resource Conservation and Recovery Act (RCRA) Section 3013(a) Administrative Order on Consent (AOC) (EPA 2012). Simplot recently completed an investigation required under the RCRA 3013 AOC and this monitoring plan is consistent with the monitoring that was being performed during the last 3 years of the investigation.

2.0 BACKGROUND

The initial groundwater monitoring requirements for the Simplot Phosphates Rock Springs facility were set forth in the 1985 PTC and are currently included in Permit No. 06-606 as permit condition 5 of 7. Groundwater monitoring is required for the gypsum storage facility as stated in Chapter 3 Section 17(d) of WDEQ Water Quality Rules and Regulations (WDEQ 2012) and results of monitoring are reported to the State of Wyoming.

Monitoring wells PZ-B1 through PZ-B4 and the collection ditch have been sampled quarterly since operation of the gypsum storage facility began, except for PZ-B1 which has not contained sufficient water to sample since March 1987. Groundwater samples were analyzed for pH, specific conductance, total dissolved solids, chloride, fluoride, sulfate, aluminum, cadmium, chromium, copper, vanadium, gross alpha, and radium-226 as required by the permit to construct. In the 2006 renewal of the permit, total phosphorus and radium-226 were added to the analyte list.

In 1991, five additional wells were drilled in the vicinity of the gypsum storage facility (PZ-B5 through PZ-B9). Wells PZ-B5 and PZ-B7 were abandoned during drilling. Wells PZ-B6, PZ-B8, and PZ-B9 were sampled in December 1991 and analyzed for total dissolved solids, chloride, fluoride, sulfate, aluminum, antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, silver, thallium and zinc. These wells were not sampled again until August 2011 when Simplot began sampling them quarterly for the same constituents as listed in the PTC.

With the initiation of the RCRA 3013 AOC in 2012, additional federal requirements for groundwater monitoring were implemented. In July 2012, after the RCRA 3013 AOC was signed, groundwater monitoring was expanded to all six existing functional groundwater

monitoring wells in place at that time: PZ-B2, PZ-B3, PZ-B4, PZ-B6, PZ-B8, and PZ-B9 (As previously mentioned, PZ-B1 has not contained sufficient water to sample since March 1987). An additional groundwater investigation was conducted under the RCRA 3013 AOC from June to September 2013 and included the drilling, installation and sampling of 39 new monitoring wells at 15 boring locations around the facility (Formation 2013). Locations of all groundwater monitoring wells and the groundwater collection ditch are shown in Figure 2-1 and well construction details are summarized in Table 2-1.

Of the 39 new wells installed only 30 contained enough groundwater to be sampled. Sampling was initiated in the 3rd quarter 2013 (September 7 to 13, 2013) at the 30 new wells (with sufficient water), the six existing monitoring wells, and the collection ditch (2 locations), for a total of 38 samples. This sampling event was the first of eight quarterly events that were required by the RCRA investigation work plan. This same scope was repeated for the 4th quarter 2013 (November 2013) and 1st quarter 2014 (March 2014) sampling events. Beginning in 2nd quarter 2014 (June 2014), the list of wells to be sampled was reduced to include a selected group of 23 monitoring wells (the six initial monitoring wells and 17 of the new monitoring wells) and two collection ditch locations, for a total of 25 samples. Recommendations for the reduction in scope were made in the Sampling and Analysis Report (SAR; Formation 2014) and approved by EPA (EPA 2014). The 13 monitoring wells that were eliminated from the sampling program were the deeper intervals at the PZ-B10, BZ-B15, PZ-B18, PZ-B20, and PZ-B21 well nests. Samples were collected from this smaller set of locations during subsequent quarterly events in August 2014, November 2014, February 2015, and April 2015.

Simplot provided a Baseline Groundwater Conditions Report presenting the results of the RCRA 3013 investigation in August 2015 (Formation 2015, revised in January 2016). The primary findings of the investigation were that, based on the high sulfate and TDS concentrations naturally found in shallow groundwater samples obtained prior to and during facility operation, groundwater at the Site is classified as Class III and Class IV(A) according to the Wyoming groundwater quality standards. Groundwater elevation and chemistry data also demonstrated that operations at the facility did not affect groundwater potential or concentrations of constituents of potential concern (COPCs) in groundwater. Groundwater quality standards are provided in Chapter 8 of WDEQ Water Quality Rules and Regulations (WDEQ 2005). Since groundwater flow velocities are sufficiently slow (less than 1 foot per day) quarterly monitoring was viewed as unnecessary and an additional reduction in the groundwater monitoring program was approved by EPA in November 2015. Under the revised program groundwater monitoring was conducted at 10 well locations and the collection ditch with samples collected semi-annually. Sampling was conducted for an additional 3 years under the RCRA 3013 AOC at the request of EPA with the last event completed in June 2018. On July 18, 2018 Simplot was notified that the requirements of the AOC had been met and that continued groundwater monitoring would be coordinated with WDEQ Water Quality Division, pursuant to Wyoming regulatory requirements.

3.0 GROUNDWATER MONITORING PROGRAM

Based on the analysis of groundwater quality and potentiometric data and the recommendations presented in the Baseline Groundwater Conditions Report (Formation Environmental 2015), the long-term groundwater monitoring network will be expanded from that in effect under the prior PTC. Groundwater level measurements will be performed quarterly at all 45 monitoring wells and the groundwater collection ditch. Groundwater samples will be collected for water quality analysis from a subset of 10 monitoring wells and the groundwater collection ditch according to the schedule provided in Table 3-1. The sample locations are shown circled in red in Figure 2-1. This is the same sampling scope approved by EPA under the RCRA 3013 AOC in November 2015. Groundwater samples will be collected from the original monitoring wells PZ-B2, PZ-B3, PZ-B4 downgradient of the groundwater collection ditch; one location in the groundwater collection ditch; and from seven of the recently installed monitoring wells semi-annually. The seven additional locations (PZ-B10A, PZ-B9, PZ-B12A, PZ-B18A, PZ-B20B, PZ-B22B, and PZ-B16A) provide for monitoring upgradient of the gypsum storage facility, east and west of the gypsum storage facility, and downgradient and outside the influence of the groundwater collection ditch. It is anticipated that PZ-B9 will be abandoned in the future as the gypsum storage facility expansion inundates the location. Upgradient monitoring at PZ-B18A will be sufficient as a replacement for the loss of this well.

The analyte list for long-term groundwater monitoring is provided in Table 3-2. The list is based on the results of RCRA 3013 investigation. Based on the conclusions presented in the Baseline Groundwater Conditions Report (Formation 2015), this list is adequate for the detection of potential changes in groundwater quality due to facility influence.

4.0 REPORTING

Groundwater monitoring data will be provided to WDEQ semi-annually following the receipt of laboratory results.

5.0 REFERENCES

Formation Environmental (Formation) 2013. Sampling and Analysis Work Plan. Prepared for Simplot Phosphates, LLC, Rock Springs, Wyoming. Revision 2. (Includes SAP, QAPP, HASP, and SOPs). December 2013.

Formation Environmental (Formation) 2014. Sampling and Analysis Report. Prepared for Simplot Phosphates, LLC, Rock Springs, Wyoming. May 2014.

Formation Environmental (Formation) 2015. Revised Draft Baseline Groundwater Conditions Report. Prepared for Simplot Phosphates, LLC, Rock Springs, Wyoming. January 2016.

U.S. Environmental Protection Agency EPA 2012. In the Matter of: Simplot Phosphates LLC, Rock Springs, Wyoming, Administrative Order on Consent (CO), U.S. EPA Region 8, CERCLA Docket No. RCRA-08-2012-0004. June 25.

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Wyoming Department of Environmental Quality (WDEQ) 1985. Permit to Construct No. 85-75R, Chevron Chemical Company, Chevron Gypsum Storage Area, WDEQ Water Quality Division Permit 85-75R. April 2, 1985.

Wyoming Department of Environmental Quality (WDEQ) 2005. Water Quality Rules and Regulations. Chapter 8. Quality Standards for Wyoming Groundwater. Cheyenne, WY.

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TABLES

Table 2-1: Monitoring Well Construction Details

Well ID	Completion Date	Borehole Total Depth (ft bgs)	Ground Elev	Top of Casing Elev	Bottom of Borehole Elev	Installed Screen Length (ft)	Top Screen Depth (ft bgs)	Top Screen Elev	Bottom Screen Depth (ft bgs)	Bottom Screen Elev	Screen Mid-point Elev	Drilling Company	Well Casing Type	Well Casing Diam. (in)	Well Screen Slot Size (in)
PZ-B1	Jul-85	52	6566.57	6,565.30	6513.3	40	12	6553.3	52	6513.3	6533.3	Fox	PVC Sch40	4	
PZ-B2	Jul-85	52	6559.19	6,562.35	6506.69	40	12	6546.69	52	6506.69	6526.69	Fox	PVC Sch40	4	
PZ-B3	Jul-85	52	6567.37	6,569.32	6514.37	40	12	6554.37	52	6514.37	6534.37	Fox	PVC Sch40	4	
PZ-B4	Jul-85	42	6576.68	6,579.09	6533.64	40	2	6573.64	42	6533.64	6553.64	Fox	PVC Sch40	4	
PZ-B6	Dec-91	76	6565.03	6,566.66	6480.47	40	36	6520.47	76	6480.47	6500.47	Searle	PVC Sch40	4	
PZ-B8	Dec-91	115	6560.59	6,563.00	6445.58	40	75	6485.58	115	6445.58	6465.58		PVC Sch40	4	
PZ-B9	11/26/91	225.5	6700.07	6,702.63	6471.12	40	185	6511.62	225.5	6471.12	6491.37	Boyles	PVC Sch40	4	
PZ-B1R	7/28/13	78	6566.38	6,569.33	6488.38	25	50	6516.38	75	6491.38	6503.88	AK Drilling	PVC Sch40	2	0.02
PZ-B10A	6/26/13	302	6551.06	6,553.27	6248.46	10	35	6516.06	45	6506.06	6511.06	AK Drilling	PVC Sch40	2	0.02
PZ-B10B	6/26/13	302	6551.06	6,553.27	6248.46	5	50	6501.06	55	6496.06	6498.56	AK Drilling	PVC Sch40	2	0.02
PZ-B10C	6/26/13	302	6551.06	6,553.28	6248.46	10	265	6286.06	275	6276.06	6281.06	AK Drilling	PVC Sch40	2	0.02
PZ-B11A	6/28/13	302	6685.87	6,688.21	6383.87	15	115	6570.87	130	6555.87	6563.37	AK Drilling	PVC Sch40	2	0.02
PZ-B11B	6/28/13	302	6685.87	6,688.21	6383.87	10	195	6490.87	205	6480.87	6485.87	AK Drilling	PVC Sch40	2	0.02
PZ-B11C	6/28/13	302	6685.87	6,688.21	6383.87	10	270	6415.87	280	6405.87	6410.87	AK Drilling	PVC Sch40	2	0.02
PZ-B12A	7/2/13	300	6747.01	6,749.42	6447.01	15	105	6642.01	120	6627.01	6634.51	AK Drilling	PVC Sch40	2	0.02
PZ-B12B	7/2/13	300	6747.01	6,749.41	6447.01	10	205	6542.01	215	6532.01	6537.01	AK Drilling	PVC Sch40	2	0.02
PZ-B12C	7/2/13	300	6747.01	6,749.41	6447.01	10	285	6462.01	295	6452.01	6457.01	AK Drilling	PVC Sch40	2	0.02
PZ-B13A	7/26/13	302	6797.48	6,799.87	6495.48	25	135	6662.48	160	6637.48	6649.98	AK Drilling	PVC Sch40	2	0.02
PZ-B13B	7/26/13	302	6797.48	6,799.86	6495.48	20	200	6597.48	220	6577.48	6587.48	AK Drilling	PVC Sch40	2	0.02
PZ-B13C	7/26/13	302	6797.48	6,799.86	6495.48	20	270	6527.48	290	6507.48	6517.48	AK Drilling	PVC Sch40	2	0.02
PZ-B14	7/9/13	110	6597.63	6,599.74	6487.63	25	85	6512.63	110	6487.63	6500.13	AK Drilling	PVC Sch40	2	0.02
PZ-B15A	7/2/13	102	6595.04	6,597.33	6493.04	15	50	6545.04	65	6530.04	6537.54	AK Drilling	PVC Sch40	2	0.02
PZ-B15B	7/2/13	102	6595.04	6,597.33	6493.04	10	90	6505.04	100	6495.04	6500.04	AK Drilling	PVC Sch40	2	0.02
PZ-B16A	7/11/13	300	6625.52	6,627.95	6325.52	25	90	6535.52	115	6510.52	6523.02	AK Drilling	PVC Sch40	2	0.02
PZ-B16B	7/11/13	300	6625.52	6,627.93	6325.52	20	180	6445.52	200	6425.52	6435.52	AK Drilling	PVC Sch40	2	0.02
PZ-B16C	7/11/13	300	6625.52	6,627.94	6325.52	20	240	6385.52	260	6365.52	6375.52	AK Drilling	PVC Sch40	2	0.02
PZ-B17A	7/13/13	300	6716.95	6,719.37	6416.95	25	110	6606.95	135	6581.95	6594.45	AK Drilling	PVC Sch40	2	0.02
PZ-B17B	7/13/13	300	6716.95	6,719.40	6416.95	20	210	6506.95	230	6486.95	6496.95	AK Drilling	PVC Sch40	2	0.02
PZ-B17C	7/13/13	300	6716.95	6,719.40	6416.95	20	270	6446.95	290	6426.95	6436.95	AK Drilling	PVC Sch40	2	0.02
PZ-B18A	7/24/13	302	6782.51	6,784.85	6480.51	25	155	6627.51	180	6602.51	6615.01	AK Drilling	PVC Sch40	2	0.02
PZ-B18B	7/24/13	302	6782.51	6,784.83	6480.51	20	212	6570.51	232	6550.51	6560.51	AK Drilling	PVC Sch40	2	0.02
PZ-B18C	7/24/13	302	6782.51	6,784.84	6480.51	20	280	6502.51	300	6482.51	6492.51	AK Drilling	PVC Sch40	2	0.02
PZ-B19A	7/30/13	302	6771.44	6,773.93	6469.44	25	125	6646.44	150	6621.44	6633.94	AK Drilling	PVC Sch40	2	0.02
PZ-B19B	7/30/13	302	6771.44	6,773.92	6469.44	20	190	6581.44	210	6561.44	6571.44	AK Drilling	PVC Sch40	2	0.02
PZ-B19C	7/30/13	302	6771.44	6,773.94	6469.44	20	265	6506.44	285	6486.44	6496.44	AK Drilling	PVC Sch40	2	0.02
PZ-B20A	7/28/13	302	6796.75	6,799.15	6494.75	25	145	6651.75	170	6626.75	6639.25	AK Drilling	PVC Sch40	2	0.02
PZ-B20B	7/28/13	302	6796.75	6,799.12	6494.75	20	200	6596.75	220	6576.75	6586.75	AK Drilling	PVC Sch40	2	0.02
PZ-B20C	7/28/13	302	6796.75	6,799.15	6494.75	20	265	6531.75	285	6511.75	6521.75	AK Drilling	PVC Sch40	2	0.02
PZ-B21A	6/29/13	300	6703.55	6,706.04	6403.55	15	140	6563.55	155	6548.55	6556.05	AK Drilling	PVC Sch40	2	0.02
PZ-B21B	6/29/13	300	6703.55	6,706.03	6403.55	10	185	6518.55	195	6508.55	6513.55	AK Drilling	PVC Sch40	2	0.02
PZ-B21C	6/29/13	300	6703.55	6,706.03	6403.55	10	230	6473.55	240	6463.55	6468.55	AK Drilling	PVC Sch40	2	0.02
PZ-B22A	7/14/13	106	6619.77	6,622.14	6513.77	15	58	6561.77	73	6546.77	6554.27	AK Drilling	PVC Sch40	2	0.02
PZ-B22B	7/14/13	106	6619.77	6,622.13	6513.77	10	90	6529.77	100	6519.77	6524.77	AK Drilling	PVC Sch40	2	0.02
PZ-B23A	7/16/13	200	6532.99	6,535.36	6332.99	15	21	6511.99	36	6496.99	6504.49	AK Drilling	PVC Sch40	2	0.02
PZ-B23B	7/16/13	200	6532.99	6,535.33	6332.99	10	57	6475.99	67	6465.99	6470.99	AK Drilling	PVC Sch40	2	0.02
PZ-B23C	7/16/13	200	6532.99	6,535.33	6332.99	10	185	6347.99	195	6337.99	6342.99	AK Drilling	PVC Sch40	2	0.02

Notes:

All elevations indicated in Feet above Mean Sea Level (msl)

All measurements to installed well materials given in feet below ground surface (ft bgs)

All annular seals between well screen filter packs nested in single boreholes were constructed of medium bentonite chips, hydrated as necessary.

Table 3-1: Long-Term Groundwater Quality Sampling Locations and Frequency

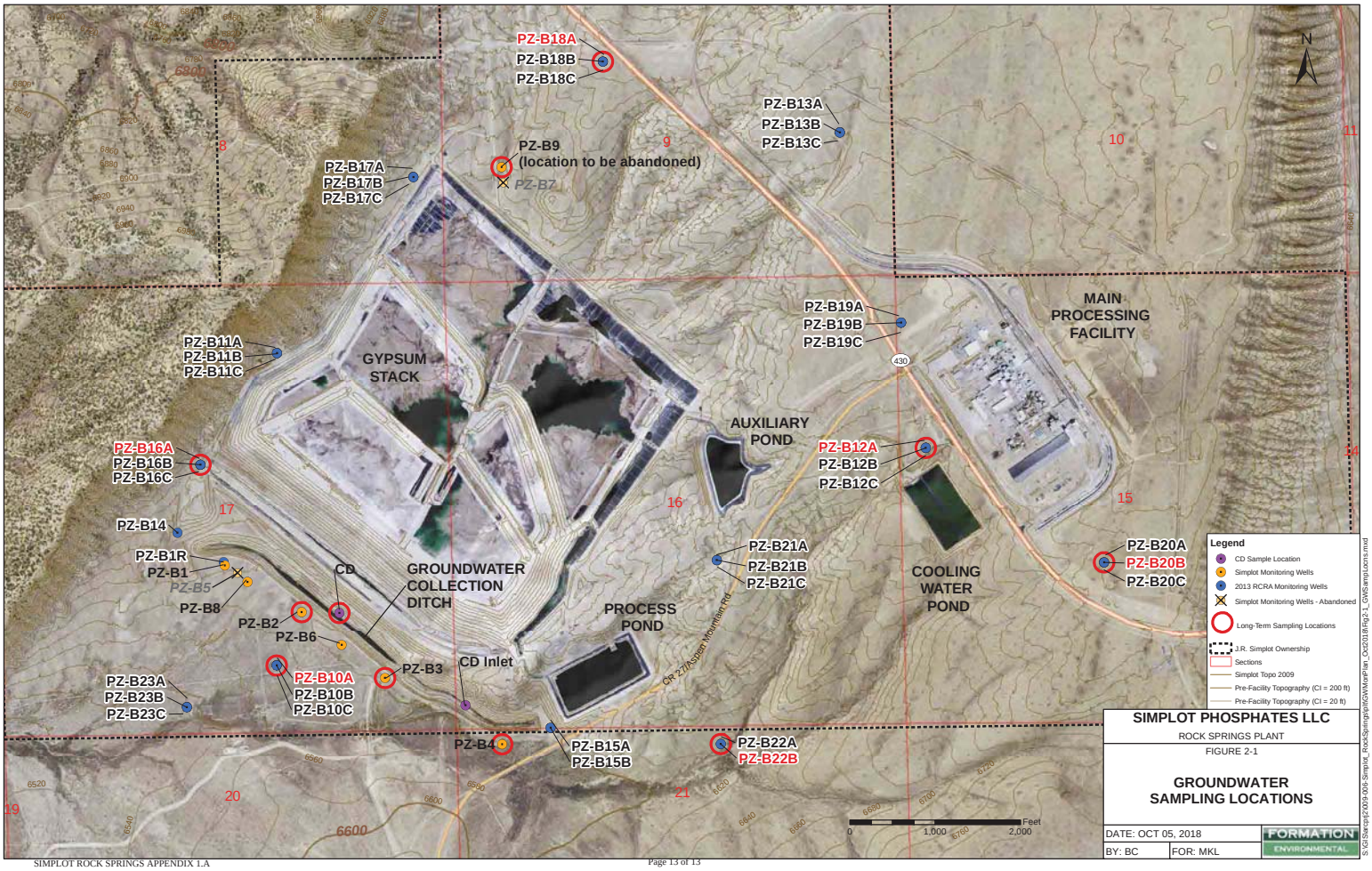
Location	Location Description	Sample Frequency
CD	Groundwater Collection Ditch	Semi-annual
PZ-B2	Downgradient of CD, within CD hydraulic influence	Semi-annual
PZ-B3	Downgradient of CD, within CD hydraulic influence	Semi-annual
PZ-B4	Downgradient of CD, within CD hydraulic influence	Semi-annual
PZ-B10A	Downgradient of CD, no CD hydraulic influence	Semi-annual
PZ-B9	Upgradient of gypsum storage facility	Semi-annual
PZ-B12A	Upgradient of gypsum stack, downgradient of processing facility	Semi-annual
PZ-B18A	Upgradient of gypsum stack west of processing facility	Semi-annual
PZ-B20B	Upgradient of gypsum stack, east of processing facility	Semi-annual
PZ-B22B	Downgradient of facility, east of gypsum storage facility	Semi-annual
PZ-B16A	West of gypsum storage facility	Semi-annual

Table 3-2: Analytical Methods for Long-Term Groundwater Sampling

Analyte	Method	Reporting Limit (RL)	Units
Field Parameters			
pH	Field Meter	±0.1	SU
Specific Conductivity	Field Meter	5	µmho/cm
Temperature	Field Meter	0.1	°C
Turbidity	Field Meter	±0.1	NTU
Dissolved Oxygen	Field Meter	0.1	mg/L
General Chemistry			
Alkalinity	SM 2320B	5	mg/L
TDS	SM 2540	10	mg/L
Major Anions			
Fluoride	EPA 300.0	0.1	mg/L
Chloride	EPA 300.0	0.2	mg/L
Sulfate	EPA 300.0	0.3	mg/L
Nitrate/Nitrite	EPA 353.2	0.1	mg/L
Major Cations (Dissolved)			
Calcium	EPA 200.7	1	mg/L
Magnesium	EPA 200.7	1	mg/L
Potassium	EPA 200.7	1	mg/L
Sodium	EPA 200.7	1	mg/L
Metals/Metalloids (Total)			
Aluminum	EPA 200.7	0.1	mg/L
Arsenic	EPA 200.8	0.003	mg/L
Cadmium	EPA 200.8	0.0002	mg/L
Chromium	EPA 200.7	0.006	mg/L
Phosphorus	EPA 200.7	0.1	mg/L
Selenium	EPA 200.8	0.002	mg/L

RL is subject to change based on laboratory capabilities at time of sample submittal.

FIGURES


PZ-B18A
PZ-B18B
PZ-B18C
PZ-B13A
PZ-B13B
PZ-B13C
PZ-B9
(location to be abandoned)
PZ-B7
PZ-B17A
PZ-B17B
PZ-B17C
PZ-B19A
PZ-B19B
PZ-B19C
MAIN
PROCESSING
FACILITY
PZ-B11A
PZ-B11B
PZ-B11C
GYPSUM
STACK
AUXILIARY
POND
PZ-B12A
PZ-B12B
PZ-B12C
PZ-B16A
PZ-B16B
PZ-B16C
PZ-B14
PZ-B1R
PZ-B1
PZ-B5
PZ-B8
CD
GROUNDWATER
COLLECTION
DITCH
PZ-B2
PZ-B6
PZ-B3
CD Inlet
PZ-B10A
PZ-B10B
PZ-B10C
PZ-B23A
PZ-B23B
PZ-B23C
PROCESS
POND
PZ-B21A
PZ-B21B
PZ-B21C
COOLING
WATER
POND
PZ-B20A
PZ-B20B
PZ-B20C
PZ-B4
PZ-B15A
PZ-B15B
PZ-B22A
PZ-B22B
CR 27/Aspen Mountain Rd
N
Legend
CD Sample Location
Simplot Monitoring Wells
2013 RCRA Monitoring Wells
Simplot Monitoring Wells - Abandoned
Long-Term Sampling Locations
J.R. Simplot Ownership
Sections
Simplot Topo 2009
Pre-Facility Topography (CI = 200 ft)
Pre-Facility Topography (CI = 20 ft)
0
1,000
2,000
Feet
SIMPLOT PHOSPHATES LLC
ROCK SPRINGS PLANT
FIGURE 2-1
GROUNDWATER
SAMPLING LOCATIONS
DATE: OCT 05, 2018
BY: BC
FOR: MKL
FORMATION
ENVIRONMENTAL
S:\GIS\Simplot\2019-004-Simplot_RockSprings\mxd\GWMonPlan_Oct2018\fig2-1_GWSampLocns.mxd

APPENDIX 1.B

PHOSPHOGYPSUM STACK SYSTEM CONSTRUCTION AND OPERATIONAL REQUIREMENTS

I. Phosphogypsum Stack System general criteria[1]

A. Phosphogypsum Stack Systems. The purpose of this document is to ensure the physical integrity of impoundments used to manage Phosphogypsum and Process Wastewater generated during production of phosphoric acid and phosphate fertilizer. This document establishes the minimum design, construction, operation, inspection, and maintenance requirements to ensure that the Phosphogypsum Stack System impoundments meet critical safety standards and do not cause unplanned releases to the environment. These requirements include maintaining inspection Logs and developing and maintaining plans to respond to emergency conditions.

1. Performance standards. A Phosphogypsum Stack System shall be designed, constructed, operated, maintained, closed, and monitored to control and minimize the movement of waste or other materials into the environment.

2. Phosphogypsum Stack System operation plan. Within six (6) months of the Effective Date, Simplot shall have a written operation plan that provides detailed instructions for the daily operation of the Phosphogypsum Stack System. Simplot shall maintain the operation plan at the Facility, and it will be accessible to operators of the Phosphogypsum Stack System. Required components of an operation plan are found in Section VIII.E.

3. Groundwater monitoring. The Facility shall perform Groundwater monitoring and reporting as described in Appendix 1.A (Groundwater Requirements).

4. Surface Water[2] management. Phosphogypsum Stack Systems shall be operated for the collection, control, recycling and/or treatment of Run-off[3] from the systems as necessary to meet the applicable water quality standards of the State of Wyoming.

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[1] All test methods, standards, and other similar protocols referenced in this appendix shall include any future amendments or replacements.
[2] See definition of "Surface Waters of the State" in Appendix 9.
[3] "Run-off" means any rainwater, Leachate, or other liquid that drains over land from any part of a Phosphogypsum Stack System.

5. Leachate management. Any Leachate emanating from a Phosphogypsum Stack System shall be routed to a Return Pond[4] to be contained within the system or recirculated to the production plant; or if discharged, treated (if required) to meet the applicable water quality standards and requirements of the State of Wyoming.

6. Interim Stack System Management Plan ("ISSMP"). Within six (6) months of the Effective Date, Simplot shall submit to the EPA for approval, an ISSMP for the Phosphogypsum Stack System. The ISSMP shall provide instructions for two (2) years of operation and management of the Phosphogypsum Stack System. The ISSMP shall provide instructions for two (2) years of operation and management of the Phosphogypsum Stack System should a shutdown occur such that no phosphoric acid will be produced at the Facility for up to a two (2) year period. By July 1 of each following year, Simplot shall revise the ISSMP and submit such revisions to the EPA for approval, taking into account the Process Wastewater levels and the existing configuration of the Phosphogypsum Stack System as of June 1 of that year. The ISSMP shall be designed to protect human health and the environment and shall include:

   a. A detailed description of Process Wastewater management procedures that will be implemented so that the Phosphogypsum Stack System operates in accordance with all applicable requirements in this Section. These procedures shall address the actual Process Wastewater levels present at the Facility as of June 1 of each year, and shall assume that the Facility will receive average annual precipitation during the subsequent two (2) year period;

   b. A detailed description of the required procedures for the daily operation and routine maintenance of the Phosphogypsum Stack System (including required environmental sampling and analyses), as well as for any maintenance or repairs recommended following annual inspections of the Phosphogypsum Stack System;

   c. Identification of all machinery, equipment, and materials necessary to implement the plan as well as actions that shall be taken to assure the availability of these items during the planning period;

[4] The phosphoric acid wastewater decanted from the Phosphogypsum Stack flows to what is often referred to as the Return Pond, return surge pond, process pond or decant pond.

d. Identification of the sources of power or fuel necessary to implement the plan as well as the actions that would be taken to assure the availability of power or fuel during the planning period; and

e. Identification of the personnel necessary to implement the plan, including direct labor required for paragraphs (a) - (b) above, and any necessary direct supervisory personnel, as well as the actions that shall be taken to assure their availability and any required training of these personnel.

B. No ISSMP is required for a closed Phosphogypsum Stack System, or one undergoing closure, or for which an application for a closure permit has been submitted where permitting requirements apply.

II. Assessment of existing Perimeter Dikes for Phosphogypsum Stack Systems

A. Except for Perimeter Dikes that are Inactive and will not be put into service, or that have already been approved by the EPA or the State of Wyoming as meeting or equivalent to the criteria set forth in (2)(a) - (c) below, within six (6) months of the Effective Date, Simplot shall submit to the EPA documentation that the existing Perimeter Dikes have been assessed and certified by a Third-Party Engineer that they have been:

1. Constructed or modified to address Freeboard, Perimeter Dike seepage, factors of safety, and slope stability in accordance with a permit issued by the State of Wyoming; or

2. Engineered or retrofitted, to be in compliance with the following:

a. Cross section design

i. Both of the Inside[5] and Outside[6] slopes shall be no steeper than two horizontal to one vertical (2H:1V).

ii. The design shall provide positive seepage control features such as:

(a) Cut-off trench in natural soil foundations
(b) Clay core or other impermeable core material
(c) Blanket drain

[5] The face of the Dike in contact with the impounded liquids.
[6] The face of the Dike not in contact with the impounded liquids.

(d) Chimney drain and Toe Drain
(e) Geomembrane or composite Liner on Inside slope

iii. The top of the Perimeter Dike and the Toe shall be accessible for maintenance and inspection.

b. Freeboard provisions

i. The design Freeboard of an above-grade Perimeter Dike shall not be less than five (5) feet unless a Freeboard of less than five (5) feet is justified based on the results of seepage and stability analyses, incorporating the evaluations described in (b)(ii) below, or was previously approved by EPA. However, in no event shall the Freeboard of an above-grade Perimeter Dike be less than three (3) feet.

ii. Freeboard shall be determined by generally accepted good engineering practices and shall include, at a minimum, evaluation of Wind Surge, Wave Height and Wave Run-up analysis, erosion protection measures, and protection of Dike integrity and inner rim ditch geometry.

iii. Sustained wind speed used for the analyses listed in (b)(ii) above shall be defined as a sustained wind speed for a 10-minute duration.

c. Design factors of safety and slope stability

i. Stability analysis. A stability analysis shall be performed. A seepage or flow net analysis shall be made, when applicable, for use in the stability analysis. The stability analysis shall consider the minimum water level as well as the water level at the design Freeboard on the upstream slope of the Perimeter Dike, and possible fluctuations of the tail water level.

ii. Design safety factors. The minimum safety factors are: 1.75 for horizontal shear at base of fill; 1.5 for horizontal shear within the fill due to seepage through the outer face; 1.5 for horizontal shear or circular arc failure through the foundation soils; and 1.5 for protection against shear failure of any circular arc in either the Inside or Outside slope. It is imperative that water pressure distribution be included in the analyses; or

iii. Evaluation by a Third-Party Engineer who certifies the safety and stability of the Perimeter Dikes in accordance with (2)(c)(i) - (ii) of this Section; or

iv. Evaluation by a Third-Party Engineer who certifies the safety and stability of the Perimeter Dikes meets an alternate design safety factor and that this alternate design safety factor has been approved by EPA.

B. Within nine (9) months of a final determination that the safety and stability of a Perimeter Dike cannot be certified in accordance with (2)(c)(i) - (iv) of this Section, Simplot shall either: (a) submit to EPA for approval: a proposal to upgrade or retrofit the Perimeter Dike to comply with the requirements of Section II(A)(2), and any interim measures recommended by a Third-Party Engineer; or (b) take the Perimeter Dike out of service as soon as practicable but no later than ninety (90) days after a final determination that the safety and stability of a Perimeter Dike cannot be certified, and that the Perimeter Dike cannot or will not be upgraded or retrofitted to comply with the requirements of Section II(A)(2).

C. Simplot, with any Perimeter Dike in need of upgrade, retrofit, or de-servicing, shall implement EPA's approval of the proposal submitted in accordance with (B) within six (6) months or as soon as practicable, weather permitting.

D. At the time the assessment is performed pursuant to Section II(A)(2), a Third-Party Engineer shall also determine, in writing, whether the existing Phosphogypsum Stack System is equipped with Process Wastewater conveyance/containment capabilities that conform to the following design requirements:

1. Conveyance ditches, pumps, pipes, and hydraulic structures located within a Phosphogypsum Stack System shall have adequate capacity to circulate the Process Wastewater stream(s), if applicable, and to contain or transfer Run-off from the Process Watershed[7] upstream of the water control structures resulting from the greater of a storm event from a combined peak precipitation and snow-melt event over a twenty-four (24) hour period using snowfall, precipitation and other meteorological data from a long-term historical record or a 100-year, twenty-four (24) hour

[7] "Process Watershed" means the aggregate of all areas that contribute to or generate additional Process Wastewater from direct precipitation, rainfall Run-off, or Leachate to a Phosphogypsum Stack, Process Wastewater, Return Pond (cooling/surge ponds), collection ponds, or any other storage, collection, or conveyance system associated with the transport of Phosphogypsum or Process Wastewater for a particular Phosphogypsum Stack System.

precipitation value,[8] while maintaining at the same time the required design Freeboard. If provisions are made to contain some of the entire storm surge resulting from such an event within the Phosphogypsum Stack System upstream from the conveyance system or water control structures, then the transfer capacity of the ditches, pumps, pipes, and related structures may be reduced accordingly.

E. Within one year of a final determination that a Phosphogypsum Stack System does not meet the design criteria of (D)(1) above, Simplot shall submit to the EPA, for approval, a proposal to modify the Phosphogypsum Stack System to attain compliance. Such modification shall be completed as soon as practicable, but not later than fourteen (14) months after Simplot receives all necessary governmental permits or approvals, whichever shall occur later.

III. Construction of New Perimeter Dikes

A. Design

1. Site investigation. The general area desired for construction of a proposed Perimeter Dike shall be carefully inspected by a Third-Party Engineer prior to selection of the exact location for the Perimeter Dike. Areas of uneven natural subsidence, sinkholes, pockets of organic matter, or other unstable soils shall be avoided, unless special provisions are made for their mitigation.

2. Soil testing. A program of soil sampling and adequate testing shall be performed to determine the characteristics of the foundation material that will support the proposed Perimeter Dike, and of the material to be used for construction of the Perimeter Dike.. Sampling and tests shall be determined by a Third-Party Engineer that may include borings, test pits, or in-place samples from the associated exposed excavation face. All borings and/or test pit explorations shall be logged using a recognized engineering soil classification system, with location and depths of all samples recorded on the Log. Tests shall be performed to determine in-place densities, shear-strength, and permeabilities of the foundation and embankment soils. Tests on foundation soils shall be performed either on undisturbed samples or on the in-place soil. Tests on embankment soils shall be performed on samples remolded to the densities and moisture contents to be used in construction.

[8] See Wyoming Water Development Office's Probable Maximum Precipitation Study, December 2014 (as updated). Table 11.5 has a 100-year, 24 hour precipitation value for Western Rocky Mountains, west divide.

3. Cross section design. The crest on the top of the Perimeter Dike shall be graded toward the Inside Slope or the Outside Slope. If the Perimeter Dike exceeds ten (10) feet in height and crest Run-off is directed toward the Outside slope, then Run-off controls shall be used to protect the Outside Slope against erosion. Both Inside and Outside Slopes shall be no steeper than two-and-one-half (2.5) horizontal to one (1.0) vertical (2.5H:1V). Seepage control shall be provided by means of a Liner constructed in accordance with Paragraph 25(b) of the Consent Decree, Appendix 7 (Alternative Liner Demonstration), and Section VI of this Appendix, placed on the Inside Slope of the Perimeter Dike.

4. Freeboard provisions. The design Freeboard of an above-grade Perimeter Dike shall not be less than five (5) feet unless a Freeboard of less than five (5) feet is justified based on results of seepage, stability, and Wave Run-up analyses. However, in no event shall the design Freeboard of an above-grade Perimeter Dike be less than three (3) feet unless the Dike is below grade pond/ditch, then Freeboard shall not be less than (2) feet.

5. Design factors of safety and slope stability of Perimeter Dikes

   a. Stability analysis. A stability analysis shall be performed. A seepage or flow net analysis shall be made, when applicable, for use in the stability analysis. The stability analysis shall consider the minimum fluid level as well as the fluid level at the design Freeboard on the upstream slope of the Perimeter Dike, and possible fluctuations of the tail water level.

   b. Design safety factors for Perimeter Dikes. The minimum safety factors for Perimeter Dikes are: 1.75 for horizontal shear at base of fill; 1.5 for horizontal shear within the fill due to seepage through the outer face; 1.5 for horizontal shear or circular arc failure through the foundation soils; and 1.5 for protection against shear failure of any circular arc in either the Inside or Outside Slope. In determining design safety factors, water pressure distribution must be addressed.

B. Site preparation. In accordance with specifications provided by the Third-Party Engineer, ground that will become the foundation of Perimeter Dikes shall be stripped of vegetation and organic detritus or residue, including muck, mud, slimes, or other material which would flow or undergo excessive consolidation under heavy loading. All earth foundation surfaces on which fill is to be placed shall be scarified, or moistened and

compacted, prior to spreading a first course of fill material. The Perimeter Dike base shall be well-drained during construction, except when placing hydraulic fill.

C. Material to be used. Material used for Perimeter Dikes shall be free of extraneous matter that could affect the compactibility, density, permeability, or shear strength of the finished Perimeter Dike (e.g., stumps, vegetation, trees, debris). Tailings may be used for Perimeter Dike fill when such a completed Perimeter Dike will meet the seepage and structural requirements above.

D. Process Wastewater control design. Conveyance ditches, pumps, pipes, and hydraulic structures located within a Phosphogypsum Stack System shall have adequate capacity to circulate the Process Wastewater stream(s), and to contain or transfer Run-off from the Process Watershed upstream of the water control structures resulting from the greater of a combined peak precipitation and snow-melt event over a twenty-four (24) hour period using snowfall, precipitation and other meteorological data from the long-term historical record or a 100-year, twenty-four (24) hour precipitation value while maintaining, at the same time, the design Freeboard of the Perimeter Dike. If provisions are made to contain all or part of the storm surge resulting from such event within the Phosphogypsum Stack System upstream from the conveyance system or water control structures, then the transfer capacity of the ditches, pumps, pipes, and related structures may be reduced accordingly.

E. Methods of construction

1. Each new Perimeter Dike shall be constructed to meet or exceed the minimum safety requirements of this Section and the specifications and design for that Perimeter Dike. Appropriate earthmoving equipment shall be used to place materials in the Perimeter Dike. The soil shall be compacted and density tests shall be performed to ensure that the designed densities are obtained. A representative of the Third-Party Engineer shall be present on-site during construction of the Perimeter Dike and Liner, and during construction and installation of spillways and penetrations through the Perimeter Dike or Liner. The EPA shall be notified of the date on which construction of a new Perimeter Dike will begin.

2. Areas around any water level control structure pipe, conduit, or surface of discontinuity between materials within the mass of the Perimeter Dike shall be carefully inspected and action taken to avoid potential concentration of seepages, and to ensure that soils under and around a culvert are uniformly compacted and are in continuous contact with the external culvert surface. All

penetrations through the Liner on the upstream slope of the Perimeter Dike shall be made using water-tight joints or connections that shall be capable of maintaining their integrity under all in-use conditions.

3. All pipes and joints in pipes or conduits extending through a Perimeter Dike shall be made leak-proof and shall be constructed of materials suitable for the fluids carried and the load imposed. To avoid leaks associated with differential settlement, conduits through Perimeter Dikes shall not be rigidly supported by piles or piers. Backfill around conduits shall be of a density that is equal to or greater than that of the surrounding embankment. Particular attention shall be devoted to the lower third of the conduit.

IV. Operational requirements for Perimeter Dikes

A. All Perimeter Dikes shall be operated to maintain the required Freeboard, unless temporary incursions into the design Freeboard are demonstrated to be safe in accordance with (B) of this Section, below. Each Perimeter Dike shall be inspected as prescribed in this document.

1. Vegetative cover adequate to inhibit wind and water erosion shall be established and maintained on the Outside Slope of the Perimeter Dike. Such vegetation shall be maintained in such a manner (e.g., height and density) as to permit visual inspection; or

2. In areas where historically evapotranspiration exceeds precipitation, an alternative method may be used to inhibit wind and water erosion on the Outside Slope of the Perimeter Dike. The alternative method must be certified by a Third-Party Engineer as providing erosion protection equivalent to that of a vegetative cover; and

3. The outside Toe of all operational Perimeter Dikes shall be maintained free of trees, or other woody plant growth whose roots may breach the Piping and compromise integrity of the Perimeter Dike.

B. Temporary use of design Freeboard to prevent a release may be authorized in accordance with Appendix 1.D (Critical Conditions and Temporary Measures).

C. A completed new Perimeter Dike shall be thoroughly inspected prior to the placement of Process Wastewater behind it. Spillways and water level control structures shall be certified by a Third-Party Engineer as meeting all specifications of the design, including the degree of compaction of the

fill. Legible photographs, either aerial or ground, shall be used in documenting this initial inspection, but shall not in and of themselves constitute certification. A complete file describing the items inspected and their condition shall be maintained by the Facility.

D. All Perimeter Dikes and water control structures shall be inspected weekly. Water level elevations and Freeboard compliance shall be determined as part of daily routine inspections. Piezometric water levels within the Perimeter Dike shall be measured quarterly if piezometers have been installed. The inspections shall be made by a qualified company employee or qualified contractor employed or retained by Simplot. The findings of each inspection shall be recorded in a Log.

E. Each Perimeter Dike shall be inspected annually by a Third-Party Engineer experienced in the field of construction and operation of Perimeter Dikes. An annual report related to such an inspection shall be prepared and include recommendations and corrective measures taken. The report shall be retained by Simplot. The annual inspections shall include:

1. Analyses of seepage or other significant items shown on all aerial photographs of the Perimeter Dike since the date of the last annual inspection.

2. Condition of soil surfaces and top and slopes of the Perimeter Dike and in areas within fifty (50) feet downstream from the outside Toe.

3. Review of all periodic inspection reports to evaluate the effectiveness of maintenance done to the Perimeter Dike during the period since the last annual inspection.

4. Examination and interpretation of data obtained from any instrumentation installed in the mass of the Perimeter Dike.

5. Condition of spillway and water level control structures, including all conduits exiting the Perimeter Dike.

F. The following items shall be considered as indicating potential trouble areas that must be documented and closely monitored in subsequent inspections and repaired as necessary:

1. Abnormal dead vegetation or abnormal damp areas[9] on the downstream slope, at the Toe of the slope, or downstream from the Toe of the slope that could be indicative of pond water seepage.

2. Surface erosion, gullying, or wave erosion on the upstream slope of the Perimeter Dike.

3. Surface erosion or gullying on the downstream slope of the Perimeter Dike.

4. Erosion below any conduit through the Perimeter Dike near or at the Toe of the slope of the Perimeter Dike.

V. Lateral Expansions of existing Phosphogypsum Stack Systems

A. Any Lateral Expansion is considered a new Phosphogypsum Stack or Component thereof for purposes of this Section and must be constructed in accordance with the applicable requirements of Section VI.[10]

B. Except for incidental deposits of Phosphogypsum entrained in the Process Wastewater, conditioned Phosphogypsum used as a cushion layer against rock slope, or Phosphogypsum Stack roadbed material, placement of Phosphogypsum outside the Phosphogypsum Stack footprint is considered a Lateral Expansion. For purposes of this Section, the footprint is defined as the outside edge of the Perimeter Dikes used to contain the placement of Phosphogypsum in the Phosphogypsum Stack.

C. Except as provided in Appendix 1.D (Critical Conditions and Temporary Measures), Section IV (Emergency Diversion Impoundment), storage or containment of Process Wastewater outside the footprint of the Phosphogypsum Stack System is considered a Lateral Expansion of the Phosphogypsum Stack System. For purposes of this paragraph, the footprint is defined as the outside edge of the dams, Dikes or ditches used to store or contain Process Wastewater.

VI. Construction requirements for New Phosphogypsum Stacks, or Lateral Expansions of existing Phosphogypsum Stack Systems or Components

A. Minimum design standards. The requirements of this Section are the minimum standards for constructing the following Components of Phosphogypsum Stack Systems after the Effective Date:

[9] Note: natural groundwater flow does occur below the Phosphogypsum Stack and such flow is observable in the cut-off ditch.

[10] A vertical expansion against a slope, where there is also a horizontal expansion, shall not be considered a Lateral Expansion as long as such vertical and horizontal expansion is part of the approved design and construction plan.

1. New Phosphogypsum Stacks;
2. New Return Ponds;
3. New Auxiliary Holding Ponds (AHP); and
4. New Process Wastewater conveyances.

B. Safety factor. Any new Phosphogypsum Stack or Lateral Expansion shall be designed with an overall factor of safety of 1.5 for any potential failure surface encompassing the impoundment on top of the stack and passing through the Phosphogypsum slope or bottom Liner interfaces or extending into earthen material in contact with the bottom Liner.

C. Run-on control. Simplot shall install and maintain a Run-on[11] management system capable of preventing the greater of flow during peak discharge calculated using precipitation data from a twenty-four (24) hour, 25-year Rainfall Event[12] or from a combined peak precipitation and snow-melt event over a twenty-four (24) hour period using snowfall, precipitation and other meteorological data from a long-term historical record.

D. Run-off control. Simplot shall maintain a Run-off management system to collect and control at least the greater of water volume resulting from a twenty-four (24) hour, 25-year Rainfall Event or from a combined peak precipitation and snow-melt event over a twenty-four (24) hour period using snowfall, precipitation and other meteorological data from a long-term historical record.

E. Liner and Leachate control systems. Phosphogypsum Stacks shall be constructed with a Leachate control system and a composite Liner or an approved alternative as described in Appendix 7 (Alternative Liner Demonstration). The composite liner (consisting of synthetic and non-synthetic layers) is described in (2), below. AHPs shall be constructed with a High-Density Polyethylene (HDPE) Liner of 60 mils or thicker. Return Ponds shall be constructed with composite Liners or an approved alternative. Process Wastewater conveyances shall be constructed with a Liner or pipe(s).

1. Phosphogypsum Stack Liners shall be:

   a. Constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure due to:

[11] Any rainwater, Leachate, or other liquid that drains over land from any part of a Phosphogypsum Stack System.
[12] A rainfall event which is characterized by a mean return period of twenty-five years, i.e., a rainfall which has a 96% probability for not being exceeded during any given year.

i. physical contact with the Phosphogypsum, Process Wastewater or Leachate;

ii. exposure to climatic conditions;

iii. the stress of installation;

iv. hydraulic pressures that are anticipated during the operational and closure period of the Liner system; and

v. the supplier of materials for the Liner components shall provide test information accepted by the Third-Party Engineer in support of the capabilities of the materials to meet these needs.

b. Installed upon a base and in a geologic setting capable of providing structural support to prevent the overstressing of the Liner due to settlements and applied stresses;

c. Constructed so that the bottom of the Liner system is not subject to fluctuations of the Groundwater, so as to adversely impact the integrity of the Liner system;

d. Designed to resist hydrostatic uplift if the Liner is located below the seasonal high Groundwater Table; and

e. Installed to cover all surrounding earth that could come into contact with the Phosphogypsum, Process Wastewater or Leachate.

2. Phosphogypsum Stack Liner design standards

a. Phosphogypsum Stacks shall be constructed atop a composite Liner or an approved alternative pursuant to Paragraph 25 of the Consent Decree and Appendix 7.

b. The synthetic component of composite Liners shall consist of a 60-mil or thicker HDPE or equivalent Geomembrane with a maximum water vapor transmission rate of 0.24 grams per square meter per day as determined by the American Society for Testing and Materials (ASTM) Method E96- 80, procedure BW, “Test Methods for Water Vapor Transmission of Materials;” Sections 04.06, 08.03 and 15.09, which document is incorporated herein by reference (and any updates thereof).

c. The non-synthetic component of composite Liners shall consist of one of the following:

i. Soil. A layer of compacted soil at least eighteen (18) inches thick, placed below the Geomembrane, with a maximum hydraulic conductivity of 1×10^{-7} centimeters per second, constructed in six-inch lifts. The Geomembrane layer shall be installed in direct and uniform contact with the compacted soil component to retard Leachate migration if a leak in the Geomembrane should occur. Soil materials used within the top twelve (12) inches of the compacted soil layer immediately below the Geomembrane shall be free from rigid or sharp objects that could damage or otherwise affect the integrity of the Liner. The soil layer component may consist of in-situ soils or compacted imported soils, provided they meet the specifications in 4(d) below for soil components of composite Liners; or

ii. Phosphogypsum. A layer of mechanically compacted Phosphogypsum at least twenty-four (24) inches thick, placed above the Geomembrane, with a maximum hydraulic conductivity of 1×10^{-4} centimeters per second. No rigid or sharp objects that could damage the Liner may be placed within this compacted layer of Phosphogypsum. A layer of compacted Phosphogypsum is not required for any vertical expansion and/or natural ground slopes steeper than 2.5H:1V abutting a vertical or horizontal expansion where Phosphogypsum slurry is discharged into the expansion area within one (1) year of completion of construction as described in Appendix 7.

d. Pursuant to Paragraph 25(b) of the Consent Decree, the non-synthetic layer of a Phosphogypsum Stack composite Liner will not be required for vertical expansions under the following conditions:

i. Where it has been demonstrated to and approved by the EPA that a synthetic Liner alone or in contact with sedimented Phosphogypsum placed in slurry form will be equivalent or superior to a composite Liner designed and installed in accordance with the requirements of Section VI; or

ii. Where it has been demonstrated to and approved by the EPA that a synthetic Liner in contact with sedimented

Phosphogypsum placed in slurry form is equivalent or superior to a composite Liner with twenty-four (24) inches of compacted Phosphogypsum placed above the Geomembrane.

Appendix 7 provides for an alternative liner demonstration.

e. Pursuant to Paragraph 25(b) of the Consent Decree, the non-synthetic layer of a Phosphogypsum Stack composite Liner will not be required for Lateral Expansions where it has been demonstrated and certified by a Third-Party Engineer and approved by the EPA that a synthetic Liner in contact with sedimented Phosphogypsum placed in slurry form, and with consideration of the physical hydrogeological setting of the specific lateral expansion, provides an equivalent or superior degree of protection for human health and the environment, designed and installed in accordance with the requirements of this Section VI.

Appendix 7 provides for an alternative liner demonstration.

3. Any proposed composite Liner design or alternative Liner demonstration shall be accompanied by a detailed construction quality assurance/quality control plan, describing in detail how the design will be properly constructed in the field. For composite Liners using compacted Phosphogypsum, the quality assurance plan shall emphasize the protection of the Geomembrane during placement and compaction of the Phosphogypsum, and on prompt placement of the Phosphogypsum on the Geomembrane. The construction quality assurance/quality control plan must be submitted to the EPA for approval.

4. The following Liner design standards must be met:

a. Standards for geosynthetic layers.

i. Geomembranes shall have factory and field seams whose shear strengths during testing are at least ninety percent (90%) of the specified minimum yield strength for that lining material, and the failure shall occur in the lining material outside the seam area. All field seams must be visually inspected and pressure or vacuum tested for seam continuity using suitable non-destructive techniques.

ii. No large or rigid objects may be placed in the Phosphogypsum Stack System in a manner that may damage the Liner or Leachate collection system and, with the exception of Liners installed at the Toe of the Phosphogypsum Stack, in no case shall such objects be placed within ten (10) vertical feet of the Liner or Leachate collection system, unless approved by the EPA.

iii. HDPE Geomembranes shall meet the specification contained in method GRI GM13 or updates thereof.

iv. Polyvinyl chloride (PVC) Geomembranes shall meet the specification contained in method PGI 1197 or updates thereof.

v. Interface shear strength of the actual components that will be used in the Liner system shall be tested with method ASTM D5321 or an equivalent test method.

vi. In addition, the synthetic Liner material shall be subjected to continuous spark testing or an industry-accepted equivalent test at the production facility prior to delivery to the site for installation. If the continuous spark or equivalent testing detects any defect, then the tested material must be rejected and not used at the site.

b. Soil layer of composite Liners

i. Shall be constructed to preclude, to the greatest extent practicable, lenses, cracks, channels, root holes, pipes, or other structural inconsistencies that can increase the saturated hydraulic conductivity of the soil component. The design shall illustrate and describe those instances in which over-excavation of permeable areas and backfilling may be necessary to seal the permeable area. The soil layer shall be placed and compacted in layers to achieve the design performance;

ii. The permeability shall not be increased above the values specified for the layer, as a result of contact with Leachate from the Phosphogypsum Stack System. Compatibility of the soil layer and Leachate shall be demonstrated by testing the soil layer with actual or simulated Leachate in accordance with EPA Test Method 9100 or an equivalent test method approved by EPA.

iii. The soil layer of the Liner system may consist of in-situ soils or compacted imported soils, provided they meet the specifications for Soil Liners.

iv. Specifications for the soil layer of the Liner system shall contain at a minimum:

(a) Allowable range of particle size distribution and Atterberg limits, to include shrinkage limit;
(b) Placement moisture criteria and dry density criteria;
(c) Maximum laboratory-determined saturated hydraulic conductivity, using simulated Leachate as the saturating and testing liquid;
(d) Minimum thickness of the Soil Liner;
(e) Lift thickness;
(f) Surface preparation (scarification) for tying lifts together; and
(g) Type and percentage of clay mineral within the soil component.

c. The Soil Liner shall be placed using construction equipment and procedures that achieve the required saturated hydraulic conductivity and thickness. A field test section shall be constructed using the proposed construction equipment that will be used to install the Soil Liner and tested to document that the desired saturated hydraulic conductivity and thickness is achieved in the field.

5. A completed new Phosphogypsum Stack System, including the Starter Dike, shall be thoroughly inspected by a Third-Party Engineer prior to the deposition of Process Wastewater in it. The Liner, spillways, degree of compaction of the fill, and the water level control structures shall be certified by a Third-Party Engineer. Legible photographs, either aerial or ground, may be used to document this initial inspection, but shall not in and of themselves constitute certification. A complete file describing the items inspected and their condition shall be made available to the State of Wyoming and/or EPA upon request.

6. Exceptions. No person shall dispose of, or store prior to disposal, any Phosphogypsum except within a permitted Phosphogypsum Stack System, in states where permitting requirements apply. This provision shall not be construed to prohibit any use or reuse of Phosphogypsum not otherwise prohibited by law.

VII. Liner system construction quality assurance/control plans

A. Construction quality assurance/quality control plan. Liner systems shall have a construction quality assurance/quality control plan to provide personnel with adequate information to achieve continuous compliance with the Liner construction requirements. This plan shall include or refer to project specifications and construction methods that use good engineering practices to construct a Liner system and provide for quality control testing procedures and sampling frequencies. Sampling and testing shall be conducted in the field by trained personnel during and after construction is completed. Such personnel shall be under the direction of a Third-Party Engineer to ensure that the Liner system will comply with the standards. The Third-Party Engineer or his qualified designee shall be on-site, at all times, during construction to monitor construction activities. Construction activities include the time during which the protective layer is installed over the Geomembrane to ensure that the placement techniques do not cause damage to the Liner system materials.

B. The Liner system construction quality assurance/quality control plan shall comply with EPA Document EPA/600/R-93/182, and updates thereof shall be presumed to be in compliance with this Section. The following minimum specific elements shall be included in the plan:

1. Responsibility and authority of all organizations and key personnel involved in permitting, designing, constructing, and providing construction quality assurance/quality control of the Phosphogypsum Stack Liner, Phosphogypsum Stack System Liners, or Component Liners shall be described fully;

2. Minimum qualifications of the Third-Party Engineer, his qualified designee(s) and supporting personnel shall be documented in the plan to demonstrate the requisite training and experience necessary to fulfill their identified responsibilities;

3. Procedures and tests that will be used to monitor the installation of the Liner system components shall be described in detail;

4. The sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for implementing corrective measures that may be necessary shall be described; and

5. Reporting requirements for construction quality assurance/quality control activities shall be described, including daily summary

reports, observation data sheets, problem identification and corrective measures, and final documentation.

6. All such documents shall be included in a final report.

C. A laboratory experienced in the testing of Geomembranes, independent of the Liner manufacturer and installer, shall perform the required testing that must include, at a minimum, conformance testing for all Geomembranes, and testing of seam shear and peel strength for all Geomembranes.

D. The Third-Party Engineer in charge of construction quality assurance/quality control plans shall provide a signed, sealed final report and record drawings stating that the Liner system has been installed in conformance with the plans and specifications and identifying any deviations.

E. Soil Liner construction quality assurance/quality control plan. In addition to the requirements of (A-D) of this Section, the following requirements apply to construction of the soil layer of Liner systems. All required testing and analysis shall be performed in accordance with generally accepted engineering procedures, such as those promulgated by the ASTM. Parenthetic references to ASTM methods are intended as guidance only.

1. The construction quality assurance/quality control plan shall include a section specifying the performance criteria for the Soil Liner and providing quality control testing procedures and minimum sampling frequencies. In addition, the construction quality assurance/quality control plan shall define the responsibilities of the parties that will be involved in Soil Liner construction and shall present minimum qualifications of each party to fulfill their identified responsibilities.

2. Field and laboratory testing during Soil Liner construction shall be conducted by a qualified field technician representing Simplot. The field technician shall work under the supervision of a Third-Party Engineer with experience in Soil Liner construction.

3. If applicable and prior to Soil Liner installation, an appropriate borrow source shall be located. Suitability of the Soil Liner construction materials from that source shall be determined in accordance with the following:

   a. If demonstrated field experience is available from at least three (3) prior successful projects of five (5) or more acres each to document that a given borrow source can meet the requirements of the project specifications, then extensive laboratory testing of the borrow source will not be required.

Additionally, the source of material shall be geologically similar to and the methods of excavating and stockpiling the material shall be consistent with those used on the prior projects. Furthermore, a minimum of three (3) representative samples of the appropriate thickness from the in-situ stratum or from stockpiles of the borrow material proposed for Soil Liner construction shall be submitted to an independent soil testing laboratory to document through index testing that the proposed material is consistent with the material used on prior successful projects. At a minimum, index testing shall consist of percent fines, Atterberg limits and moisture content determinations.

b. If the above demonstrated field experience is not available or cannot be documented, then the following requirements shall be met:

   i. A field exploration and laboratory testing program shall be conducted by an independent soil testing laboratory to document the horizontal and vertical extent and the homogeneity of the soil strata proposed for use as Soil Liner material. A sufficient number of index tests from each potential borrow stratum shall be performed to quantify the variability of the borrow materials and to document that the proposed borrow material complies with project specifications. At a minimum, the index tests shall consist of percent fines, Atterberg limits and moisture content determinations.

   ii. Sufficient laboratory hydraulic conductivity tests shall be conducted on samples representative of the range in variability of the proposed borrow source (ASTM D-5084). For each such sample, test specimens shall be prepared and tested to cover the range of molding conditions (moisture content and dry density) required by project specifications. The hydraulic conductivity tests shall be conducted in triaxial type permeameters. The test specimens shall be consolidated under an isotropic consolidation stress no greater than ten (10) pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved

and relatively constant values of hydraulic conductivity are measured (ASTM D-5084).

iii. The borrow source shall only be considered suitable if the hydraulic conductivity of the material, as documented on laboratory test specimens, can be shown to meet the requirements of the project specifications at the ninety-eight percent (98%) confidence level.

iv. Amended soil (in-situ or imported) considered for use shall meet the same standards.

c. Prior to full-scale Soil Liner installation, a field test section or test strip shall be constructed at the site above a prepared sub-base. The field test section or test strip will only be considered acceptable if the measured hydraulic conductivities of undisturbed samples from the field test section or test strip meet the requirements of the project specifications at the ninety-eight percent (98%) confidence level. Field test sections or test strips shall be constructed in accordance with the following requirements:

i. The test section or test strip shall be of sufficient size such that full-scale Liner installation procedures can be duplicated within the test section;

ii. The test section shall be constructed using the same equipment for spreading, kneading and compaction. This includes the same construction procedures (*e.g.*, number of passes, moisture addition and homogenization, if needed) that are anticipated for use during full-scale Liner installation;

d. At a minimum, the Liner test section shall be subject to the following field and laboratory testing requirements:

i. A minimum of five (5) random samples of the Soil Liner construction material delivered to the site during test section or test strip installation shall be tested for moisture content (ASTM D-2216), percent fines (ASTM D- 1140) and Atterberg limits (ASTM D-4318);

ii. At least five (5) field density and moisture determinations shall be performed on each lift of the compacted Soil Liner test section;

iii. Upon completion of the field test section, the thickness of the lift shall be measured at a minimum of five (5) random locations to check for thickness adequacy; and

iv. A minimum of five (5) Shelby tubes or drive cylinder (ASTM D-2937) samples shall be obtained from each lift of the field test section for laboratory hydraulic conductivity testing. Laboratory hydraulic conductivity testing shall be conducted in triaxial type permeameters (ASTM D-5084). The test specimens shall be consolidated under an isotropic consolidation stress no greater than ten (10) pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and relatively constant values of hydraulic conductivity are measured (ASTM D-5084). Alternatively, a sealed double-ring infiltration field test (ASTM D3385) may be used as an alternative to drive cylinder or Shelby tube samples.

e. Full scale Soil Liner installation may begin only after completion of a successful Soil Liner field test section. During Liner construction, documentation of quality control testing shall be maintained and made available to the EPA upon request, to document that the installed Liner conforms to approved project specifications. The testing frequencies for quality control testing are specified below; however, during construction of the first five (5) acres of the Liner, these frequencies shall be doubled. Samples shall be obtained from random locations selected by a Third-Party Engineer. If there are indications of a change in material properties, product quality or construction procedures during Liner construction, then additional tests shall be performed to determine compliance.

F. Field testing during Liner system installation. The following field tests shall be performed:

1. Prior to the laying of the Liner materials, and, if applicable, the Liner sub-base shall be compacted to the specified density. Density tests shall be conducted at a minimum rate of two tests per acre:

a. A minimum of two (2) moisture content and field density determinations shall be conducted per acre per lift of the compacted Liner. The degree of compaction shall be checked using the one-point field Proctor test or other appropriate test procedures; and

b. A minimum of four (4) thickness measurements shall be conducted per acre per lift of the compacted Liner.

G. Laboratory testing during Liner installation. The following laboratory tests shall be performed:

1. Percent fines (ASTM D-1140) of the Liner construction material shall be determined at a minimum frequency of two (2) tests per ace per lift of installed Liner;

2. Atterberg Limits determinations shall be performed on one (1) sample per acre per lift of installed Liner; and

3. Hydraulic conductivity testing of Shelby tube or drive cylinder (ASTM D-2937) samples of the compacted Liner shall be performed at a minimum frequency of one (1) test per acre per lift. Laboratory hydraulic conductivity tests shall be conducted in triaxial type permeameters (ASTM D-5084). The test specimens shall be consolidated under an isotropic consolidation stress no greater than ten (10) pounds per square inch and permeated with water under an adequate backpressure to achieve saturation of the test specimens. The inflow to and outflow from the specimens shall be monitored with time and the hydraulic conductivity calculated for each recorded flow increment. The test shall continue until steady state flow is achieved and substantially constant values of hydraulic conductivity are measured.

a. If the test data from a Liner section does not meet the requirements of the project specifications, then additional random samples may be tested from that Liner section. If such additional testing demonstrates that the thickness and hydraulic conductivity meet the requirements of the project specifications at the ninety-five percent (95%) confidence level, then that Liner section will be considered acceptable. If not, then that Liner section shall be reworked or reconstructed so that it does meet these requirements.

H. Leachate control system standards

1. A perimeter underdrain system designed to stabilize the side slopes of the Phosphogypsum Stack shall be installed above the Geomembrane Liner.

2. Perimeter drainage conveyances used in the Leachate control system shall either consist of covered or uncovered ditches that are lined continuously with the Phosphogypsum Stack Liner, or of chemically compatible Leachate collection pipes. Covered ditches shall have maintenance manholes installed at appropriate intervals. Piped systems shall have manholes or appropriate cleanout structures at appropriate intervals unless the Third-Party Engineer certifies and identifies areas where manholes or cleanout structures in piped systems are not feasible.

3. All Toe Drain or Leachate collection systems must be constructed within the lined system.

I. Liquid containment and conveyance systems

1. HPDE Liners shall be used on all liquid containments and conveyances associated with Phosphogypsum transport, cooling water, and return of Process Wastewater. Exceptions are pumped flow systems contained in pipes or alternative systems that provide an equivalent degree of protection as certified by a Third-Party Engineer.

2. Pump and Piping systems associated with the transport of Phosphogypsum or Process Wastewater that cross Surface Waters of the State must be double contained with chemically compatible materials in a manner that assures that all materials under pumped flow are contained within a lined system in the event of a leak or piping system failure.

VIII. Requirements for Actively Operated/Inactive Phosphogypsum Stacks, Phosphogypsum Stack Systems or Components of Phosphogypsum Stack Systems

A. All Active Phosphogypsum Stack Systems or Components thereof shall be inspected daily, including any noted areas containing critical conditions, (as defined in (3) below), until corrected. Inactive Phosphogypsum Stack compartments, Phosphogypsum Stack slopes, collection ditches and drain outlets shall be inspected at least weekly. At accessible locations that are

not submerged, flow from drain outlets shall be checked quarterly.[13] The total areal coverage of Process Wastewater on the Phosphogypsum Stack shall be estimated each month, and the total water inventory on top of the Phosphogypsum Stack shall be estimated annually. The required inspections and estimates shall be carried out by a qualified company employee or contractor employed by Simplot. The results of the required inspections and estimates shall be recorded in a Log maintained by Simplot.

B. Where a leak detection system exists, the amount of liquid removed from any such system must be recorded weekly.

C. Each Phosphogypsum Stack System shall be inspected within one year of the Effective Date and annually thereafter by a Third-Party Engineer with experience in the field of construction and operation of Phosphogypsum Stacks. This inspection shall also include an annual inspection of the associated Perimeter Dike. This annual inspection shall be recorded in a report and include an updated aerial photograph, state the area of the top of the Phosphogypsum Stack, and the current height and elevation of the Phosphogypsum Stack. The annual inspection report shall include recommendations and corrective measures taken as required by (D) below. If corrective measures are not completed by the time of annual submittal, then follow up inspections shall be conducted by the Third-Party Engineer on a quarterly basis with quarterly project reports submitted until completion of all corrective measures. One copy of the annual inspection report shall be submitted to the EPA.

D. In addition to the indicators set forth in Appendix 1.D (Critical Conditions and Temporary Measures), the following items shall be considered among those indicating potential trouble areas that must be documented and closely checked on subsequent inspections and repaired and/or addressed as necessary:

1. Concentrated seepage (e.g., springs or boils) on the face of a Phosphogypsum Stack or at the Toe of the slope without active signs of Piping at the point of seepage.

2. Previously observed localized sloughing at the Toe of the slope of the Phosphogypsum Stack.

3. Previously observed cracks in the surface of the slope or crest of the Phosphogypsum Stack.

[13] If flows can be measured, they will be measured. Otherwise, a notation will be made as to whether flow can be seen or not; if flow is not measured but can be seen, then qualitatively assessed: low, moderate or high flow.

4. Non-flowing or noticeable diminishing drains, and if so, determine the cause and take appropriate action.

5. Observed or suspected damage to the Liner system where there is a release or the potential for a release from the Liner system.

E. Phosphogypsum Stack System operation plans. The following items shall be included in the operation plan for each Phosphogypsum Stack System and shall be approved by a Third-Party Engineer experienced in the construction and operation of Phosphogypsum Stacks:

1. The method used to raise and operate the Phosphogypsum Stacks;

2. A description of the source and consistency of Phosphogypsum used in constructing the Gypsum Dikes and the method used for shaping and/or mechanically working the Phosphogypsum;

3. The overall average exterior slope for raising the Phosphogypsum Stack and the maximum design height of the Phosphogypsum Stack;

4. The procedures used to assure that pipes used to transport Phosphogypsum to the Phosphogypsum Stack System and to return Process Wastewater to the phosphoric acid or fertilizer production facilities are operated and maintained in a safe manner;

5. The procedures used to decant Process Wastewater from the top of the Phosphogypsum Stack;

6. The location of pumps, spillways, and staff gauges; and

7. Provisions that describe emergency measures to be taken in the event of mechanical failure of a pump, or in the event of a power failure, for any portion of a Phosphogypsum Stack System that relies on pumps or power to operate monitoring equipment or to transfer Process Wastewater and/or precipitation Run-off from low areas to the main Return Pond. Such emergency provisions shall, at a minimum, include:

a. Back-up power (*e.g.*, on-site power, diesel generator, etc.) and/or back-up pump that would be activated in the event of electrical or mechanical failure; or

b. Sufficient surge storage capacity or emergency surge capacity within the conveyance system to contain the Process Wastewater stream(s) as well as Run-off from the

greater of a storm event generating a combined peak precipitation and snow-melt event over a twenty-four (24) hour period using snowfall, precipitation and other meteorological data from the long-term historical record or a 100-year, twenty-four (24) hour precipitation value; or

c. Increased inspection frequencies or continuous monitoring (e.g., remote video camera or automatic water level control device tied to a warning system) to provide early warning of an imminent spill prior to its occurrence; and an emergency action plan that would be undertaken to prevent or contain an accidental spill.

8. Site-specific water management plan. A site-specific water management plan shall be prepared as part of the required operation plan within six (6) months of the Effective Date, and shall be updated annually to reflect changes in Process Watershed area, available surge capacity, projected water balances and use of any Emergency Diversion Impoundment(s) (EDI) (see Appendix 1.D, Section IV). Simplot shall address in the plan the possibility and/or feasibility that one or more Component areas of the Phosphogypsum Stack System may be closed or otherwise removed from the Phosphogypsum Stack System to reduce the watershed and projected Process Wastewater inventory based on all relevant factors, including: (i) the five (5) year water balance analysis as set forth in (F) below; (ii) whether the removal of any Component areas can be done without compromising plant operations; or (iii) the operability or integrity of the Phosphogypsum Stack System, the effect of any potential removal areas on the operability of the Phosphogypsum Stack System prior to permanent closure, and any legal or regulatory requirements. The updated plan shall be consistent with any water quality-based effluent limits applicable to the Facility. This plan shall specify, at a minimum, a set of specific actions, including minimum Process Water consumption and transfer rates, that are determined to be necessary based on water balance model results for the precipitation scenarios described in subsection (F) below, or when the storage volume, surge capacity or operational Freeboard of the Return Ponds are determined to be inadequate to contain the precipitation from the greater of a storm event generating a combined peak precipitation and snow-melt event over a twenty-four (24)-hour period using snowfall, precipitation and other meteorological data from the long-term historical record or a 100-year, twenty-four (24) hour precipitation value. This analysis will be updated every five (5) years. The site specific-water management plan and annual updates thereof shall be submitted to the EPA.

9. The adequacy of the Facility's site-specific water management plan and emergency measures shall be based on a five (5)-year water analysis as set forth in (F) below.

F. Water balance analysis. The water balance analysis for the site-specific water management plan shall use the first day of the month that succeeds the month of the year with the highest long-term average precipitation total as the beginning date for the analysis, unless the EPA approves the use of an alternate beginning date where a larger volume of precipitation or water accumulation (such as snowmelt) is expected. The analysis shall identify the rates of all water inputs and outputs, any manufacturing production changes, and changes in the Process Watershed area identified in the analysis. A Third-Party Engineer shall verify the accuracy of the analysis. A summary of the analysis and the water balance analysis results shall be included in the annual updated site-specific water management plan required in (8) above.

1. The water balance calculations shall be performed based on data from the Wyoming Water Development Office's Probable Maximum Precipitation Study, December 2014, as updated.[14]

2. The water balance analysis for any Phosphogypsum Stack System shall indicate whether the system storage will be less than any of the following water balance targets:

   a. At the beginning of the snowy or rainy season, the calculated 100-year, twenty-four (24) hour precipitation event plus one-half the value for the 25-year, twenty-four (24) hour rainfall event calculated (in inches) for the area where the Facility is located;

   b. At the end of the snowy or rainy season, the calculated long-term or 100-year, twenty-four (24) hour precipitation event calculated (in inches) for the area where the Facility is located; or

   c. Water levels that exceed impoundment Maximum Design Levels[15] at any time during a year.

3. If the water balance for any Phosphogypsum Stack System indicates that system storage is less than the water balance

[14] Table 11.5 of this document has a 100-year, 24-hour precipitation value.
[15] The engineer-certified maximum water elevation that an impoundment is designed to contain, without failure or overtopping, as determined using generally accepted good engineering practices with appropriate factors of safety.

targets, Simplot must provide reasonable assurance that additional Process Wastewater consumption or management items, not already included as outputs in the water balance analysis, are readily available and capable of maintaining these water balance targets. Use of available storage within an AHP, up to its Maximum Design Levels, may be used to provide this assurance.

4. If the water balance indicates that at any time during the five (5)-year modeling period that Process Wastewater levels, in conjunction with available Process Wastewater consumption or management, will not meet the water balance targets, Simplot must provide additional Process Wastewater consumption or management. Simplot shall also submit an alternative plan and implementation schedule for approval by EPA for the additional consumption or management measures within ninety (90) days of submittal of the water balance analysis. The plan and schedule shall include, at a minimum, the following elements:

   a. A listing and description of the additional Process Wastewater consumption or management to be evaluated, including the identification of items that can be rapidly implemented to achieve the water balance targets;

   b. A list of interim measures that can be implemented to prevent an unpermitted release of Process Wastewater in the event that actual precipitation events contribute to Process Wastewater levels exceeding Maximum Design Levels; and

   c. A proposed schedule for the evaluation, selection, engineering, design, construction, installation or implementation of the items and interim measures needed to increase water consumption, reduce inventories, or any combination of such actions that will result in achievement of the water balance targets.

IX. Contingency plans for operating Phosphogypsum Stack Systems

A. Contingency plan. Except for Phosphogypsum Stack Systems for which a contingency plan already exists, within six (6) months of the Effective Date, Simplot shall prepare a contingency plan to address unplanned releases of Process Wastewater. All contingency plans shall be updated (as necessary) on an annual basis. The elements of such a plan shall address the applicable elements of the "National Response Team's Integrated Contingency Plan Guidance," 61 Fed. Reg. 28,641 (June 5, 1996), which is incorporated herein by reference, and shall include plans

necessary to respond to emergency situations. The contingency plan shall be maintained at the Facility and be available for inspection by EPA upon request.

B. Training. Simplot shall provide annual training regarding the inspection and operations requirements contained in the contingency plan to appropriate personnel. Newly hired personnel shall receive such training prior to engaging in inspection or operations activities. A training plan consistent with the requirements of contingency plan shall be maintained at the Facility and be available for inspection upon request. Records demonstrating that appropriate personnel have received the necessary training shall be maintained in accordance with Paragraph 74 of the Consent Decree.

APPENDIX 1.C

CLOSURE OF PHOSPHOGYPSUM STACKS/ PHOSPHOGYPSUM STACK SYSTEMS/ COMPONENTS

I. Applicability - Closure of Phosphogypsum Stacks/Phosphogypsum Stack Systems/Components of a Phosphogypsum Stack System

A. The requirements of this Section apply only to a Phosphogypsum Stack, Phosphogypsum Stack System, or Component thereof that has not already undergone permanent closure approved by Wyoming DEQ. If only a portion of a Phosphogypsum Stack System (e.g., lower side slopes) has undergone permanent closure approved by Wyoming DEQ, then only that permanently closed portion of the Phosphogypsum Stack System is released from the requirements of this Section. Any Component that has been closed after 2005 shall be subject to the Long-Term Care provisions of Section VI.

II. General Requirements for the Phosphogypsum Stack System Closure Plans

A. Applicability. The following requirements apply to a Phosphogypsum Stack, Phosphogypsum Stack System, or Component thereof.

1. Initial Closure Plan. The approved Initial Closure Plan is attached as Appendix 8 (Initial Closure Plan for the Facility), and meets the requirements set forth in Appendix 2 (Financial Assurance), Section II (1)(a). Any update to the Initial Closure Plan must include the following requirements:

2. Physical Configuration. A description of the physical configuration of the Phosphogypsum Stack System for that period of time for which a Cost Estimate has been prepared in accordance with Appendix 2.

3. Site-Specific Water Management Plan. A site-specific water and sludge management plan describing the procedures to be employed during closure of the Phosphogypsum Stack System to manage the anticipated volume of Process Wastewater and Leachate. The Closure Plan shall address the anticipated ponded water inventory at the beginning of the closure period, anticipated closure sequence, water balance during the closure period, Phosphogypsum Stack drainage during the closure period and Long-Term Care period, adequacy of available surge storage capacity through the closure period, treatment, evaporation or consumption rate (including neutralization, if applicable), and disposition of ponded Process Wastewater and Leachate, both during the Phosphogypsum Stack System closure period and Long-Term Care activities.

4. Cost Estimate. Simplot shall submit a Cost Estimate in accordance with the requirements in Appendix 2, Section II.

5. A description of all construction work necessary to properly undertake Phosphogypsum Stack System Closure.

III. Permanent Closure Requirements for Phosphogypsum Stacks/Stack Systems

A. Notification and Closure Application. At least ninety (90) days before the permanent deactivation of a Phosphogypsum Stack System or within thirty (30) days following a decision to permanently cease operations, whichever is later, Simplot shall notify the Wyoming DEQ and EPA. Within two-hundred-and-seventy-five (275) days of the notification, Simplot shall submit for approval a closure application (Appendix 1.E), including a Permanent Phosphogypsum Stack System Closure Plan ("Permanent Closure Plan"), to EPA and Wyoming DEQ, as described below.

B. Permanent Closure Plan. The Permanent Closure Plan shall satisfy the requirements of this Section or shall contain an explanation of why the requirements are not applicable. Valid information on record in an existing permit or approved Groundwater monitoring plan may be used to satisfy the applicable requirements of this Section.

C. General information report. This report must be submitted for approval to EPA and Wyoming DEQ, and shall contain:

1. Identification of the Phosphogypsum Stack System;
2. Name, address and phone number of primary contact persons;
3. Identification of persons or consultants preparing this report;
4. Present property owner and Phosphogypsum Stack System operator;
5. Location by township, range and section and latitude and longitude of the Phosphogypsum Stack System;
6. Total acreage of the Phosphogypsum Stack System;
7 Map of the property as set forth in Appendix 3 (Site Maps); and
8. History of the Phosphogypsum Stack System, including construction dates and a general description of operations.

D. Area information report. This report details the area in which the Phosphogypsum Stack System is located. The report must use verifiable information. The term "area" means that area that may affect or be affected by

the Phosphogypsum Stack System, and at a minimum includes the land within a one-mile radius of the Phosphogypsum Stack System. The report shall be supplemented by maps and cross-section drawings. The following topics shall be addressed in the report:

1. Topography;
2. Hydrology, including Surface Water[1] drainage patterns and hydrologic features such as Surface Waters, springs, drainage divides and wetlands;
3. Geology, including the nature and distribution of lithology, unconsolidated deposits, major confining units and sinkholes;
4. Hydrogeology, including depth to Groundwater Table, Groundwater flow directions, recharge and discharge areas used by public and private wells within one mile of the Phosphogypsum Stack System;
5. Groundwater and Surface Water quality; and
6. Land use information. The report shall include a discussion and maps indicating:

    a. Identification of adjacent landowners;
    b. Zoning;
    c. Present land uses; and
    d. Roads, highways, rights-of-way, or other easements.

E. Groundwater monitoring plan. The Groundwater monitoring plan and most recent report submitted to Wyoming DEQ.

F. Assessment report of the effectiveness of existing Phosphogypsum Stack System design and operation. Based on the area information report and the Groundwater monitoring plan, a written assessment shall be prepared that discusses the effects of the Phosphogypsum Stack System on adjacent Groundwater and Surface Waters, and the Phosphogypsum Stack System area. Specific concerns to be addressed are:

1. Effectiveness and results of the Groundwater monitoring plan; and
2. Effects of Surface Water runoff, drainage patterns, and existing storm water controls.

[1] See definition of “Surface Waters of the State” in Appendix 9.