

**DISCHARGE PERMIT RENEWAL
MOSAIC POTASH CARLSBAD, DP-1399
POTASH TAILING AND BRINE MANAGEMENT SYSTEM**

March 9, 2011 - Draft

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit, DP-1399, to Mosaic Potash Carlsbad (Mosaic) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

The NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from the potash tailing and brine management system that may move directly or indirectly into ground and surface water, so as to protect ground and surface water for present and potential future use as domestic and agricultural water supply; to abate pollution of ground and surface water; and to protect public health. In issuing this Discharge Permit, NMED has determined that the requirements of 20.6.2.3109.C NMAC have been met.

Facility Description

Mosaic Potash Carlsbad (Mosaic) includes the Potash Plant and the Tailings Management Area, which consists of the Salt Stack, the Clay Settling Dike, the Clay Settling Pond, the Salt Stack Dike No. 1, the Salt Stack Contingency Dike, the Laguna Uno Brine Management Area, the Brine Pipeline and the Laguna Grande Brine Management Area.

Currently, tailings from the potash ore refining process including granular salt, clay minerals, residual reagent and brine are discharged at approximately 4,000 gallons per minute (gpm) to the Salt Stack. As the salt solids settle out, brine containing clay runs off/through the stack and precipitates throughout the tailings area; the fine material is deposited in deltaic fashion over an area approximately one mile wide and three miles long into Laguna Uno. Laguna Uno is a natural, unlined playa lake from which brine is assumed to seep into the subsurface and flow uncontrolled down Nash Draw eventually surfacing in Laguna Grande.

At the time of this Discharge Permit issuance, construction is underway on a system to redirect brine away from Laguna Uno and discharge it directly to Laguna Grande. Solid salts and some clays will be captured behind the newly constructed Salt Dike No. 1 (SD1); brine and entrained clay will be diverted through a decant structure to the recently (2005) constructed Clay Settling Pond (CSP). The SD1 will be constructed from both salt and earthen materials and is not expected to fully contain seepage. It is designed to impound precipitated salt solids from brine runoff and it will need continued maintenance to preserve its integrity. In the upcoming years, several more salt dikes (SD2 through SD6) will eventually be constructed upstream from SD1 to contain and gradually raise the Salt Stack as future mining progresses. The Salt Stack

Contingency Dike (SSCD) will be constructed immediately south (downstream) of the SD1. The SSCD will be constructed of earthen material from a nearby borrow area and keyed into the undisturbed alluvium and evaporites underlying the existing salt and clay tailings. It is designed to divert surface and subsurface flow of brine into the CSP, contain tailings salt and clay solids from possible breaches of SD1, and minimize subsurface seepage of brine, thus minimizing the flow of brine to Laguna Uno. Brine that collects behind the SSCD will be diverted through an open channel decant structure to the CSP. The brine in the CSP will be further clarified by settling out clays, and then decanted through a structure into a 24-inch HDPE pipeline that extends six miles to the brine management/evaporation area located within the Laguna Grande. Brine will be discharged from the pipeline at approximately 4,000 gpm to the brine management/evaporation area and then transferred to a series of evaporation cells for salt harvesting operated by United Salt and New Mexico Salt. The Southwest Laguna Grande Dike, completed in April 2009, was constructed on the southwest side to help protect ground and surface water along the Pecos River by containing brine within Laguna Grande.

Location of Discharge

The Mosaic Potash Plant and associated facilities covered under this Discharge Permit are located approximately 15 to 17 miles east and southeast of Carlsbad in Eddy County, New Mexico. The Potash Plant is located in Sections 1 and 12, T22S, R29E; the Salt Stack is located in Sections 1, 12 and 13, T22S, R29E and Sections 6, 7 and 18, T22S, R30E; the Clay Settling Ponds and Laguna Uno Brine Management Area are located in Sections 13, 24 and 25, T22S, R29E and Sections 19 and 30, T22S, R30E; the Brine Pipeline is located in Sections 23, 24, 26 and 35, T22S, R29E and Sections 2, 3 and 10, T23S, R29E; the Laguna Grande Brine Management Area is located in 3, 4, 5, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22 and 28 T23S, R29E and Sections 13 and 24, T23S, R28E.

Quantity, Quality, and Flow Characteristics of the Discharge

The regulated discharge consists primarily of brine, granular salt and clay minerals discharged at approximately 4,000 gallons per minute to a salt stack. Other discharges include plant wash water and miscellaneous losses of dilute process solutions and domestic discharges from septic drains and leachfields. Solid phase salts settle out on the stack and clays are removed in a settling pond. The clarified brine is currently discharged to Laguna Uno, but will eventually be discharged directly to Laguna Grande via a six-mile pipeline for evaporation and salt harvesting. The brine exceeds water quality standards under WQCC Regulations in 20.6.2.3103.B NMAC for chloride, sulfate and total dissolved solids (TDS) at approximate concentrations of 41,000 mg/L, 190,000 mg/L and 390,000 mg/L respectively. The maximum discharge rate of brine to Laguna Grande is 7,500,000 gallons per day.

Characteristics of Groundwater

In the area adjacent to the mine site and extending to Laguna Grande, the depth to ground water ranges from approximately 20 feet below ground surface to near ground surface, and the TDS concentration ranges from approximately 90,400 to 367,000 milligrams per liter (mg/l). Ground

water south and west of the Laguna Grande Brine Management/Evaporation Area that potentially could be affected by the discharges has a TDS concentration ranging from 4,400 to 64,200 mg/l.

General

Mosaic's Discharge Plan includes the letters and documents submitted by Mosaic to NMED dated January 13, 2009, June 10, 2009, and October 1, 2009. The discharge plan also includes materials submitted as part of the original discharge plan approved on March 15, 2004. The discharge shall be managed in accordance with the Discharge Plan as conditioned by this Discharge Permit Renewal.

Pursuant to 20.6.2.3109.E NMAC, NMED reserves the right to modify permit requirements in the event NMED determines that the requirements of 20.6.2 NMAC are being, or may be, violated or standards of 20.6.2.3103 NMAC are being, or may be, violated at a place of withdrawal of water for present or reasonably foreseeable future use due to a discharge regulated under this Discharge Permit. This may include a determination by NMED that operational practices approved under this Discharge Permit are not protective of ground and surface water quality, and that a modification is necessary to protect water quality or abate water pollution. Permit modification may include but is not limited to lining or relining impoundments, changing discharge locations, changing waste and leachate management practices, expanding monitoring requirements and/or implementing abatement of water pollution.

Issuance of this Discharge Permit Renewal does not relieve Mosaic of its responsibility to comply with all conditions or requirements of the WQA, WQCC Regulations, and any other applicable federal, state, and/or local laws and regulations such as zoning requirements and nuisance orders.

II. FINDINGS

In issuing this Discharge Permit Renewal, NMED finds:

1. Mosaic is discharging effluent or leachate from the Mosaic Potash Plant so that such effluent or leachate may move directly or indirectly into groundwater within the meaning of 20.6.2.3104 NMAC.
2. Mosaic is discharging effluent or leachate from the Mosaic Potash Plant so that such effluent or leachate may move into groundwater of the State of New Mexico which has an existing concentration of 10,000 milligrams or less of total dissolved solids within the meaning of 20.6.2.3101.A NMAC.
3. The discharge from the Mosaic potash facilities is not subject to any of the exemptions of 20.6.2.3105 NMAC.
4. Portions of the Mosaic potash facilities are located at a place of withdrawal of water for present or reasonable foreseeable future use within the meaning of 20.6.2.3101A NMAC.

III. PERMIT CONDITIONS

Mosaic shall comply with the following conditions, which are enforceable by NMED.

OPERATIONS

1. Mosaic shall conduct the operational requirements set forth below in accordance with the WQCC Regulations at Sections 20.6.2.3106.C and 3107 NMAC to ensure compliance with 20.6.1 and 20.6.2 NMAC.

Discharge Description and Authorization

2. Mosaic is authorized to manage discharges of tailings and brine as follows. [20.6.2.3109 NMAC]
 - A. *Salt Stack/Salt Dikes:* Tailings slurry generated at the mine is discharged to the Salt Stack area to settle salt solids and some minor clay. Internal salt dikes (SD1 – SD6) shall be constructed as needed on the south end of the Salt Stack to decant brine, settle out additional salt and clay solids, and to control the future expansion of the Salt Stack.
 - B. *Salt Stack Contingency Dike:* An earthen dike shall be constructed and operated to divert brine into the CSP as it may move off the Salt Stack and through the salt dikes, which are located upslope. Brine and storm water shall be diverted through an open channel decant structure to the Clay Settling Pond (CSD).
 - C. *Clay Settling Pond:* Brine decanted from behind Salt Dike No. 1 (SD1) and the Salt Stack Contingency Dike (SSCD) shall be collected in the Clay Settling Pond and associated Clay Settling Dike (CSD) to settle out additional clays and precipitated salt.
 - D. *Brine Pipeline:* Brine in the Clay Settling Pond shall be decanted and transferred via gravity through a six-mile 24-inch high density polyethylene (HDPE) pipeline to the brine management area in Laguna Grande.
 - E. *Laguna Grande Brine Management Area:* Brine shall be discharged to Laguna Grande at an approximate rate of 4,000 gpm. The discharged brine will be transferred to evaporation cells within Laguna Grande for salt harvesting. Internal dikes are constructed to manage and control brine.
3. Mosaic is authorized to discharge brine at a rate not to exceed 7,500,000 gallons per day via pipeline to the Laguna Grande Brine Management Area for evaporation and salt harvesting. [20.6.2.3109 NMAC]

Brine Pipeline

4. Within 60 days of completion, Mosaic shall submit as-built plans to NMED of the six-mile brine pipeline extending from the Clay Settling Pond to the Laguna Grande Brine Management Area. [20.6.2.3109 NMAC]

Contingency and Salt Dikes

5. Mosaic shall construct, operate and maintain the SSCD, SD1 and associated decant structures as described in the *Engineering Design Report* dated October 2009. As-built construction drawings and a final report shall be submitted to NMED within 90 days of completion of the project construction. [20.6.2.3109 NMAC]

Clay Settling Pond

6. Mosaic shall submit as-built plans for the brine pipeline within 90 days of completion. The clay-settling pond (CSP) and brine pipeline shall be operated and maintained as described in the *Engineering Design Report* dated October 2009, and any subsequent published changes or additions to the *Engineering Design Report*. [20.6.2.3109 NMAC]

Laguna Grande Internal Dikes

7. Within 120 days of the issuance of this Discharge Permit, Mosaic shall submit a report evaluating the stabilization and/or construction of the existing internal brine management dikes within Sections 18 and 20 of Laguna Grande. The report shall include a geotechnical subsurface investigation that evaluates the conditions and mechanisms which may have contributed to past failures of the dikes, shall provide options for stabilization and/or reconstruction, and provide a contingency for possible dike failures in the future. [20.6.2.3109 NMAC]

Storm Water Management

8. Mosaic shall manage onsite storm water as follows. [20.6.2.3109 NMAC]
 - A. Plant area non-contact water shall be diverted to an arroyo for ponding and infiltration.
 - B. Storm water upgradient of the plant and tailings management area shall be routed around the area via excavated channels and dikes to Lindsey Lake on the west side, and to Laguna Uno on the east side.
 - C. Interior dikes constructed in the Clay Settling Area at the toe of the Salt Stack shall be designed to divert storm water runoff from the stack to the Clay Settling Pond.
 - D. The Southwest Laguna Grande Dike shall serve to contain storm water and clarified brine from Laguna Grande and storm water from the west side of the Laguna Grande basin.

MONITORING, REPORTING AND OTHER REQUIREMENTS

Monitoring Well and Piezometer Installation

9. All monitoring wells and piezometers shall be completed in the shallow alluvium in order to detect seepage beneath the SSCD. The location of all new wells shall be approved by NMED prior to installation. The wells shall be constructed according to *NMED Monitoring Well Construction and Abandonment Guidelines* or alternate method approved by NMED. Construction and lithographic logs shall be submitted to NMED within 60 days of well completion. [20.6.2.3107 NMAC]

Monitoring Well and Piezometer Replacement

10. Mosaic shall provide NMED at least 30 days notification of the anticipated destruction or removal of any monitoring wells or piezometers required under DP-1399. In the event of unintentional well destruction or damage requiring well abandonment, Mosaic shall notify NMED as soon as possible. The notification shall include a description of monitoring well abandonment procedures and propose a replacement well location for NMED approval. Monitoring well abandonment shall be performed in accordance with *NMED Monitoring Well Construction and Abandonment Guidelines* or alternate method approved by NMED. [20.6.2.3107 NMAC]

Ground Water Investigations

11. Within 120 days of completion of the SSCD, Mosaic shall submit a plan to evaluate the effectiveness of the SSCD and investigate the presence of ground water in areas surrounding and downgradient of the salt stack. The plan shall include the installation piezometers east and west of the salt stack, and at a minimum, a nested pair of piezometers (shallow and deep) on the SSCD dam crest to monitor the efficiency of the dike to reduce brine and storm water runoff from the salt stack moving into Laguna Uno. [20.6.2.3107 NMAC]
12. Mosaic shall review existing information with the objective of further refining its understanding of the subsurface between Laguna Grande and the Pecos River using existing and new information. The following tasks shall be completed.
 - A. Analysis shall be conducted correlating precipitation data, groundwater levels, lake levels in Laguna Grande, and stage data from the Pecos River.
 - B. A thorough geochemical analysis shall be conducted of existing groundwater data from previously active and current wells, focusing on major ion ratios and characteristics that may distinguish different source waters/sources. The analysis shall include the correlation of analyte concentrations in groundwater to concentrations in natural waters, tailings waters, and other water sources. The analysis shall take into account the composition of the various geologic units present in the subsurface and their potential to affect groundwater chemistry along possible flow paths.

- C. An assessment shall be completed of hydraulic properties as they relate to transport times and pathways between Laguna Grande, existing wells, and the Pecos River.
- D. Mosaic shall map areal and vertical caliche, conglomerate, and other shallow geologic strata. This task shall include generation of isopach maps and new cross sections.
- E. Analysis of Pecos River data, including stage and changes of major-ion constituent concentrations with time.

The results of these analyses will be combined into a comprehensive hydrologic and geochemical report focused on the area between Laguna Grande and the Pecos River, with an emphasis on potential impacts to the Pecos River. This information will be presented to NMED no later than 470 days after this discharge permit renewal. [20.6.2.3107 NMAC]

Monitoring Requirements

- 13. Mosaic shall conduct the following monitoring, reporting, and other requirements set forth below in Conditions 14 through 19. A summary of monitoring requirements is attached to this Permit as Table 1. [20.6.2.3107 NMAC].

Water Sampling

- 14. Ground Water Monitoring Wells – Mosaic shall monitor ground water quality as follows. The monitoring wells listed below identify locations at which Mosaic’s discharges’ effects on ground water shall be measured. [20.6.2.3107 NMAC]
 - A. Mosaic shall sample Monitoring Wells LG-1, LG-2, LG-5, LG-23, LG-25, LG-26, LG-27, LG-28, LG-29, LG-30, and all new monitoring wells for the following parameters.
 - 1) The depth to the water table and the elevation above mean sea level (amsl) shall be measured to the nearest hundredth of a foot (0.01 ft), quarterly.
 - 2) Water samples shall be collected quarterly and analyzed for the parameters listed in Condition 17A.
 - B. Mosaic shall sample Monitoring Wells LG-1, LG-2, LG-25, LG-26, LG-29 and LG-30 for the following parameters.
 - 1) Water samples shall be collected quarterly and analyzed for the parameters listed in Conditions 17B.

Analytical results and depth to ground water measurements shall be reported as required in Condition 19 below.

15. Effluent Quality – Mosaic shall collect a sample of the brine effluent discharged to Laguna Grande annually and analyze the sample for the parameters listed in Conditions 17B. Analytical results shall be reported as required in Condition 19 below. [20.6.2.3107 NMAC]
16. Discharge Volume – Mosaic shall measure the monthly volume of brine discharged to the Laguna Grande settling pond using a totalizing meter or other measuring device approved by NMED. Discharge volumes shall be reported as required in Condition 19 below. [20.6.2.3109 NMAC]

Analysis

17. Mosaic shall analyze samples of ground water and surface water for the parameters listed below. Samples of ground water from monitoring wells shall be analyzed for dissolved concentrations of the analytes listed below. Analyses of brine effluent shall exclude field parameters (17A) and shall be analyzed for dissolved and total concentrations of the analytes listed in Condition 17B below. Mosaic may request a reduction in the frequency of laboratory analysis of specific parameters after the first year of monitoring. [20.6.2.3107 NMAC]
 - A. Field and/or laboratory parameters: pH, temperature and specific conductance.
 - B. General chemistry parameters: calcium, magnesium, sodium, potassium, sulfate, chloride, and total dissolved solids.

Methodology

18. Unless otherwise approved in writing by NMED, Mosaic shall conduct sampling and analysis in accordance with the most recent editions of the following documents.
 - A. American Public Health Association, *Standard Methods for Examination of Water and Wastewater*.
 - B. U.S. Environmental Protection Agency, *Methods for Chemical Analysis of Water and Waste*.
 - C. U.S. Geological Survey, *Techniques for Water Resource Investigations of the U.S. Geological Survey*.
 - D. American Society for Testing and Materials, *Annual Book of ASTM Standards, Part 31, Water*.
 - E. U.S. Geological Survey, et al., *National Handbook of Recommended Methods for Water Data Acquisition*.
 - F. Surface water monitoring must also be conducted according to test procedures approved under Title 40 CFR Part 136. [20.6.2.3107 NMAC]

Reporting

19. Mosaic shall submit the semi-annual reports (both paper and electronic copies) by the last day of January and July of each year. The reports shall include but are not limited to the information summarized below. [20.6.2.3107 NMAC]
 - A. A summary of all activities related to the discharges during the preceding six months. Examples include Section 20.6.2.1203 NMAC reportable spills, general operations, operational failures, discharge volumes, changes in daily flow rates, maintenance, repairs, monitoring well and piezometer installation and abandonment, storm water management, facility construction, water quality and water level trends, and precipitation patterns.
 - B. A groundwater analysis and water level table that includes a summary of quarterly water quality data and a map of the Mosaic mine facility showing the location of all wells. The table shall be in paper and electronic formats (EXCEL spreadsheet) and include water quality data with only those parameters analyzed and water levels measured during a single event (calendar quarter) shown in columns. Tabulated electrical conductivity shall include the measured field values and corrected values to 25° Celsius. Monitoring sites shall be shown in rows. Values exceeding standards shall be bolded. Any parameter not analyzed for a particular site shall be shown as “NA”, any site not sampled shall be shown as “NS” with an associated reason, and any site not measured for water levels shall be shown as “NM” with an associated reason. Copies of signed laboratory analyses sheets shall be maintained at the site and made available to NMED staff upon request.
 - C. Daily volumes of brine discharged from the brine pipeline to Laguna Grande.
 - D. A potentiometric map shall be prepared semi-annually which incorporates all water level data for the monitoring wells listed in Condition 14A.1 from the most recent sampling event.

CONTINGENCY MEASURES

Groundwater and Surface Water Exceedences

20. In the event that monitoring indicates groundwater or surface water standards are exceeded, or the extent or magnitude of existing groundwater contamination is significantly increasing, Mosaic shall collect a confirmatory sample from the monitoring well(s) within 15 days of the completion of the initial analysis in order to confirm the initial sampling results. Within 30 days of the confirmation of groundwater or surface water contamination or significant increases in existing contamination, Mosaic shall submit to NMED for approval an abatement plan, which includes a site investigation to define the source, nature and extent of contamination; a proposed abatement option, and a schedule for its implementation. The site investigation and abatement option shall be consistent with the requirements and provisions of Sections 20.6.2.4101, 4103, 4106, 4107, 4108 and 4112 NMAC. [20.6.2.3107.A (10) NMAC]

Operational Failures

21. In the event of a pipeline break, pump failure, pond overflow or other system failure associated with any facility covered under DP-1399, all discharge water shall be contained, pumped and transferred to areas of the facility that impose minimal impacts to groundwater quality. Failed components shall be repaired or replaced as soon as possible and no later than 72 hours from the time of failure unless Mosaic obtains a written consent and a new timetable from NMED. [20.6.2.3107A (10) NMAC]

Spill Reporting

22. In the event of a discharge that is not authorized by this Discharge Permit, Mosaic shall initiate the notification and corrective actions as required in 20.6.2.1203 NMAC. Mosaic shall take immediate corrective action to contain and remove or mitigate the damage caused by the discharge. Within 24 hours of discovery of the discharge, Mosaic shall verbally notify the NMED and provide the information outlined in 20.6.2.1203.A.1 NMAC. Within seven days of discovering the discharge, Mosaic shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. Mosaic shall submit a corrective action report within 15 days after the discovery of the discharge. [20.6.2.1203 NMAC]

CLOSURE

23. Within 180 days of the issuance of this Discharge Permit Renewal, Mosaic shall submit a detailed closure plan for the brine collection and evaporation facilities associated with runoff from the salt stack, routing of the brine through Nash Draw, and eventual collection and evaporation in Laguna Grande. The closure plan must include, at a minimum, closure activities for the contingency dike, clay settling basin, effluent pipeline, and structures associated with Laguna Grande. [20.6.2.3107A (11) NMAC]
24. Mosaic shall continue ground water monitoring as described in Condition 14 of this permit for two years after closure to confirm the absence of ground water contamination. If monitoring results show that the ground water standards in Section 20.6.2.3103 NMAC are being exceeded, Mosaic shall implement the contingency plan described in Condition 20 of this permit. Following notification from NMED that post-closure monitoring may cease, Mosaic shall plug and abandon all monitoring wells and piezometers in accordance with *NMED Guidelines for Monitoring Well Construction and Abandonment* (copy enclosed). When all post-closure requirements have been met, Mosaic may request to terminate the discharge permit. [20.6.2.3107A (11) NMAC]

FINANCIAL ASSURANCE

25. Mosaic shall maintain financial assurance in an amount sufficient to cover the cost of a third party to implement the closure plan described in Condition 23 and 24 of this discharge

permit. The financial assurance shall ensure that funds will be available to implement the closure plan if at any time after cessation of operation of the Laguna Grande brine evaporation facility Mosaic is unable, unwilling, or otherwise fails to implement closure of the facility. [20.6.2.3107A (11) NMAC]

26. Within 180 days of the effective date of this Discharge Permit Renewal, Mosaic shall submit to NMED for approval a cost estimate for implementation of the closure plan required in Conditions 23 and 24. The cost estimate shall include a line item cost for each facility to be closed and post-closure activities. The submittal shall include supporting documentation justifying the cost basis for each facility to be closed, and shall take into consideration the costs for work plan preparation, field work, sampling, field instrumentation, consultant fees, laboratory analyses, data evaluation, indirect costs, and final reports. [20.6.2.3107A (11) NMAC]
27. Within 180 days of the effective date of this discharge permit; Mosaic shall submit to NMED for approval a draft of its proposed financial assurance instrument(s) that meet the requirements of Conditions 28 through 30. The financial assurance instrument(s) shall include 1) a letter of credit, bond or other such instrument and 2) a standby trust agreement to be used as a repository for forfeited financial assurance instruments, as necessary. [20.6.2.3107A (11) NMAC]
28. Within 30 days after NMED approval of the cost estimate and draft financial assurance instrument(s), Mosaic shall execute the financial assurance instrument(s). Mosaic shall provide NMED with an original signed and notarized copy of each of the financial assurance instrument(s). The financial assurance instrument(s) shall name NMED as the beneficiary. The instruments shall be maintained until the financial assurance is released in writing by NMED. [20.6.2.3107A (11) NMAC]
29. Within 30 days after NMED approval of the draft standby trust agreement, Mosaic shall execute the standby trust agreement. Mosaic shall provide NMED with an original signed and notarized copy of the standby trust agreement. The standby trust agreement shall name NMED as the beneficiary and shall be in a form provided by NMED. The standby trust shall be maintained until the financial assurance is released in writing by NMED. [20.6.2.3107A (11) NMAC]
30. The financial assurance, including any revised financial assurance, shall meet the following standard requirements:
 - A. The financial assurance shall be executed in an amount equal to the NMED approved closure cost estimate. The closure cost estimate shall include direct costs associated with third party implementation of the closure plan, contingency costs and NMED oversight and administration costs, including indirect costs.
 - B. Except as provided herein, NMED shall be named as the sole beneficiary in the financial assurance instrument.

- C. The financial assurance instruments shall remain in effect throughout the term of this discharge permit, including the post-closure period, and until released in writing by NMED. The financial assurance shall remain in place at all times, including lapses in discharge permit coverage, late discharge permit renewal or temporary shut down of facilities covered under this discharge permit.
- D. The financial assurance shall include a method for adjustments due to inflation, new technologies, and NMED approved revisions to the closure plan based on continued investigations or other information.
- E. No more than once every 12 months Mosaic may request that NMED review remaining closure measures, including alternative closure measures that NMED has approved. The request for closure review shall describe the closure measures completed and shall contain an updated cost estimate for remaining closure measures. If NMED approves the description of completed closure measures and the cost estimate for remaining closure measures, NMED will adjust the amount of financial assurance to reflect the revised cost estimate.
- F. The financial assurance shall be evaluated, and if necessary, revised to comply with WQCC financial assurance regulations if and when such regulations are promulgated and become effective.
- G. The financial assurance shall include a provision, which requires the financial assurance provider to provide at least 120 days written notice to NMED and Mosaic prior to cancellation or non-renewal of the financial assurance. Mosaic shall obtain an NMED-approved alternate financial assurance mechanism within 60 days of such notice. If Mosaic fails to obtain alternate financial assurance within 60 days, the current financial assurance shall become immediately payable to the standby trust fund.
- H. If NMED determines that implementation of the closure plan is required and that Mosaic is unable or unwilling or will otherwise fail to conduct or complete the closure requirements of this discharge permit, then NMED may proceed with forfeiture of all or part of the financial assurance. Prior to beginning a forfeiture proceeding, NMED will provide written notice, by certified mail return receipt requested, to Mosaic and to all financial assurance providers, if applicable, informing them of the determination to forfeit all or a portion of the financial assurance. The written notice will state the reasons for the forfeiture and the amount to be forfeited. The amount shall be based on the total cost of performing closure, including post-closure monitoring and maintenance, in accordance with this Discharge Permit and all applicable laws and regulations. NMED will also advise Mosaic and all financial assurance providers, if applicable, of the conditions under which forfeiture may be avoided. Such conditions may include, without limitation, an agreement by Mosaic, by a financial assurance provider, or by an NMED-approved third party to perform closure, including post-closure monitoring and maintenance, in accordance with this discharge permit and all applicable laws and regulations, and a demonstration that such person has the financial ability and technical qualifications to do so. All financial assurance forfeited shall become immediately

payable to the standby trust fund or as otherwise provided in the approved instruments. Forfeited funds shall be used to complete performance of the closure plan. If the forfeited amount is insufficient, Mosaic shall be liable for the remaining costs. If the amount forfeited is more than necessary, the excess amount shall be refunded to the person from whom it was collected.

- I. All or part of the financial assurance shall be released or modified when NMED determines that the corresponding closure and post-closure measures covered by the financial assurance have been completed according to the closure plan requirements of this discharge permit. [20.6.2.3107A(11) NMAC]
30. Within 90 days of NMED approval of a revised closure plan or post-closure measures, or upon determination that existing financial assurance is inadequate, Mosaic shall submit to NMED for approval a revised closure cost estimate and financial assurance instruments. Within 30 days of NMED approval of the revised financial assurance instruments, Mosaic shall execute the revised financial assurance instruments and submit signed, notarized copies to NMED. [20.6.2.3107A (11) NMAC]

GENERAL TERMS AND CONDITIONS

31. Mosaic shall comply with the following general conditions, which shall be enforceable by NMED.

Record Keeping

32. Mosaic shall maintain at its facility a written record of all data and information on monitoring of groundwater, surface water, seepage, and meteorological conditions pursuant to this Discharge Permit including the following information. [20.6.2.3107.A NMAC]

The date, exact time, and exact location of each sample collection or field measurement;

The name and job title of the person who performed each sample collection or field measurement;

- A. The date of the analysis of each sample;
- B. The name and address of the laboratory and the name and job title of the person that performed the analysis of each sample;
- C. The analytical technique or method used to analyze each sample or take each field measurement;
- D. The results of each analysis or field measurement, including the raw data; and,
- E. A description of the quality assurance and quality control procedures used.

33. Such data and information as described in Condition 32, shall also be maintained on all split and duplicate samples, spike and blank samples, and repeat samples. [20.6.2.3107.A NMAC]
34. Mosaic shall maintain a written record of any spills, seeps or leaks of effluent, or process fluids not authorized by this Discharge Permit. [20.6.2.3107.A NMAC]
35. Mosaic shall maintain a written record of the operation, maintenance and repair of all facilities/equipment used to treat, store, or dispose of wastewater; to measure flow rates; to monitor water quality; or, to collect other data required by this Discharge Permit. This record shall include repair, replacement or calibration of any monitoring equipment and repair or replacement of any equipment used in the conveyance of process waters throughout this permit area. [20.6.2.3107.A NMAC]
36. Notwithstanding any company record retention policy to the contrary, until such time as NMED determines that all closure measures have been completed in accordance with the requirements of this Discharge Permit, Mosaic shall retain copies of all data, records, reports, and other documents generated pursuant to this Discharge Permit. Such record retention period may be increased by the NMED at any time upon written notice to Mosaic. [20.6.2.3107.A NMAC]
37. All such data, records, reports, and other documents generated pursuant to this Discharge Permit, shall be provided to the NMED upon request. [20.6.2.3107.A NMAC]

Inspection and Entry

38. Mosaic shall allow the Secretary or an authorized representative of NMED, upon the presentation of credentials to:
 - A. Enter any property or premises owned or controlled by Mosaic at reasonable times upon Mosaic's premises or at another location where records are kept under the conditions of this Discharge Permit or any Federal or WQCC regulation.
 - B. Inspect and copy, at reasonable times, records required to be kept under the conditions of this Discharge Permit or pursuant to State or Federal water quality regulations.
 - C. Inspect, at reasonable times, any facility, equipment (including monitoring and control equipment for treatment works), practices or operations regulated or required under this Discharge Permit or under any Federal or WQCC regulations.
 - D. Sample or monitor at reasonable times any effluent, water contaminant, or receiving water at any location before or after the discharge for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the New Mexico Water Quality Act. [20.6.2.3107.D NMAC] [74-6-9.B and E WQA]

39. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of the NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107 NMAC]

Duty to Provide Information

40. Within a reasonable time after a request from the NMED, which time may be specified by the NMED, Mosaic shall provide the NMED with any relevant information to determine whether cause exists for modifying, terminating, or renewing this Discharge Permit, or to determine whether Mosaic is in compliance with this Discharge Permit. [20.6.2.3107.D NMAC] [74-6-9.B and E WQA]
41. Nothing in this Discharge Permit shall be construed as limiting in any way the information gathering authority of the NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107.D NMAC] [74-6-9.B and E WQA]

Spills, Leaks and Other Unauthorized Discharges

42. This Discharge Permit authorizes only those discharges specified herein. Any discharge not authorized by this Discharge Permit or any other Mosaic Discharge Permit is a violation of the WQCC Regulations at 20.6.2.3104 NMAC. Mosaic must report any such discharge to the NMED, and it must take corrective action to contain and remove or mitigate the damage caused by the discharge in accordance with Section 2.6.2.1203 NMAC and, if applicable, Condition 24. [20.6.2.1203 NMAC]

Modifications and Amendments

43. Mosaic shall notify the NMED of any changes to its leachate or process water collection or disposal system, including any changes in the leachate or process water flow rate or the volume of leachate or process water storage, or of any other changes to its mining operations or processes that would result in any significant change in the discharge of water contaminants. Mosaic shall obtain NMED approval, as a modification to this Discharge Permit pursuant to Section 20.6.2.3109.E, F, or G NMAC, prior to any increase in the quantity leachate or process water discharged, or any increase in the concentration of water contaminants discharged, above those levels approved in this Discharge Permit. [20.6.2.3107 NMAC]

Enforcement

44. Any violation of the requirements and conditions of this Discharge Permit, including any failure or refusal to allow the NMED to enter and inspect records or facilities, or any refusal or failure to provide the NMED with records or information, may subject Mosaic to an enforcement action. Pursuant to WQA § 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, suspending or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both.

Pursuant to the WQA §§ 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA § 74-6-5, the WQCC regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation standard, or order adopted pursuant to such other provision. For certain violations specified in the WQA § 74-6-10.2, criminal penalties may also apply.

Compliance with Other Laws

45. Nothing in this Discharge Permit shall be construed in any way as relieving Mosaic of its obligation to comply with all applicable Federal, State, and local laws, regulations, permits, or orders. [74-5-5.K WQA]

Liability

46. The approval of this Discharge Permit does not relieve Mosaic of liability should the operation result in actual pollution of surface or groundwater which may be actionable under other laws and/or regulations. [20.6.2.1220 NMAC]

Right to Appeal

47. Mosaic may file a petition for a hearing before the WQCC on this Discharge Permit. Such petition must be made in writing to the WQCC within thirty (30) days after Mosaic receives this Discharge Permit. Unless a timely petition for a hearing is made, the decision of NMED shall be final. [74-6-5.N WQA]

Transfer

48. Prior to any transfer of ownership, control, or possession of the permitted facility or any portion thereof, Mosaic shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Permit with the notice. Mosaic shall deliver or send by certified mail to the NMED a copy of the notification and proof that such notification has been received by the proposed transferee. [20.6.2.3111 NMAC]

Term

49. The effective date of this Discharge Permit is the date it is issued and signed by the Chief of the Groundwater Quality Bureau. The term of this Discharge Permit is five (5) years, and the Permit will automatically expire five (5) years from the date it is issued. To renew this Discharge Permit, Mosaic must submit an application for renewal at least 120 days before that date. [74-6-5.H and 20.6.2.3109.H NMAC]

Issued this ____ day of _____, 2011

William C. Olson, Chief
Groundwater Quality Bureau
New Mexico Environment Department

Under authority delegated by the Secretary of the New Mexico Environment Department

MOSAIC POTASH CARLSBAD, INC., DP-1399 MONITORING SUMMARY

Monitoring Reports are due by: 31-JAN, 31-JUL

Table 1: Monitoring Summary

Annual Sampling Frequency	Annual Reporting Frequency	Number of Sites	Sampling Description
4	2	10 and all new wells	Water levels, pH, temperature & specific conductance quarterly.
4	2	5 and all new wells	Ca, Mg, Na, K, SO ₄ , Cl, TDS & ClO ₄ quarterly.
As needed	As needed	1	Ca, Mg, Na, K, SO ₄ , Cl, TDS in storm water after precipitation event.
1	1	1	Ca, Mg, Na, K, SO ₄ , Cl, TDS annually in effluent discharged to Laguna Grande.
12	2	1	Discharge volumes to Laguna Grande.
	2		Activities Report.

Table 2: Ground Water Monitoring Schedule

Area	Well Number	Sampling					Notes
		Type	Q1	Q2	Q3	Q4	
	LG 1	mw	ABW	ABW	ABW	ABW	
	LG 2	mw	ABW	ABW	ABW	ABW	
	LG 5	mw	AW	AW	AW	AW	
	LG 23	mw	AW	AW	AW	AW	
	LG 25	mw	ABW	ABW	ABW	ABW	
	LG 26	mw	ABW	ABW	ABW	ABW	
	LG 27	mw	AW	AW	AW	AW	
	LG 28	mw	AW	AW	AW	AW	
	LG 29	mw	ABW	ABW	ABW	ABW	
	LG 30	mw	ABW	ABW	ABW	ABW	

Explanation to Abbreviations and Symbols

<p><u>Type:</u> mw = monitoring well ew = extraction well sw = surface water spg = spring sp = seep</p>	<p><u>Sampling Quarter:</u> Q1 = Jan-Mar Q2 = Apr-Jun Q3 = Jul-Sep Q4 = Oct-Dec</p>
<p><u>Sampling Analytical Suites:</u> A = Field parameters: Temp, pH, specific conductance B = General chemistry parameters: Ca, Mg, Na, K, SO₄, Cl, TDS W = Depth to water measurement to the nearest 0.01 foot.</p>	