

BEFORE THE STATE ENVIRONMENTAL COMMISSION

STATE OF NEVADA

In Re:)
Appeal of the Water Pollution Control Permit)
No. NEV0070005, issued to Silver Peak)
Lithium Project (Chemetall Foote Corporation))
by Silver Peak Ad Hoc Advisory Committee.)

NEVADA DIVISION OF
ENVIRONMENTAL PROTECTION'S
MOTION TO DISMISS APPEAL, OR
ALTERNATIVELY, FOR BRIEFING
SCHEDULE

A. INTRODUCTION

Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation ("NDEP"), by and through counsel, Catherine Cortez Masto, Attorney General for the State of Nevada, Cassandra Joseph, Deputy Attorney General, hereby moves to dismiss the appeal of the renewal of the Water Pollution Control Permit No. NEV0070005 (the "Permit"), to Silver Peak Lithium Project (Chemetall Foote) (the "Permittee"). On August 18, 2012, after initially filing an appeal on the expired Form 3, the Silver Peak Ad Hoc Advisory Committee ("SPAHAC") filed an appeal with the State Environmental Commission on the proper Form 3 to Request an Appeal Hearing. See Appeal (Notice, Demand Objection and Form 3, collectively attached as Exhibit 1).

The SPAHAC fails to allege in its appeal a valid basis for the State Environmental Commission ("SEC") to deny or modify the Permit. The SPAHAC asserts that NDEP violated constitutional and other laws in renewing the permit, but fails to identify those laws. Generally speaking, SPAHAC argues that the Permit does not protect the health and safety of the public or the environment, but fails to identify how NDEP has erred. In light of the facts that the Permit specifically prohibits the degradation of any waters of the State, and that the groundwater beneath the Facility is exempt from regulation because it is already unfit for human consumption, SPAHAC's vague allegations regarding health and safety cannot support a modification or denial of the Permit. Accordingly, the appeal should be dismissed.

B. BACKGROUND INFORMATION

In 1978, NDEP issued National Pollutant Discharge Elimination System Permit

1 NEV0070005, under which the Permittee operated until a Water Pollution Control Permit was
2 issued under the same number in 1992. On June 7, 2012, NDEP renewed the Water
3 Pollution Control Permit to the Permittee. The Permit allows Chemetall Foote to construct,
4 operate and close the Silver Peak Lithium Project Facility (the "Facility"), including
5 authorization to process up to 6,000 tons of ore annually. The Facility is located in Esmeralda
6 County, approximately 40 miles southwest of Tonopah, near the town of Silver Peak. The
7 Permit is effective June 22, 2012 and remains in effect until March 23, 2017. The Permit
8 requires that the Facility "[n]ot release or discharge any process or non-process contaminants
9 from the fluid management system." Permit (attached as Exhibit 2) at Section I.A.3. The
10 Permittee is also required to provide quarterly and annually monitoring reports on a host of
11 wells and waste streams, and if there is a release, also conduct soil sampling. Permit at
12 Sections I.D and II.B. The Permittee is required under the Permit to report any spills or
13 releases. See Permit at Sections II.B.2.c. and II.B.3. This includes the requirement to report
14 any release in any quantity of hazardous substance to surface water, or that threatens a
15 vulnerable resource" Permit at Section II.B.3(a).

16 Although the Permit prohibits the release or discharge of any contaminants, it is
17 important to understand that the groundwater beneath the Clayton Playa where the Facility is
18 located is exempted from the drinking water standards pursuant to NRS 445A.424(2) for the
19 following reasons:

- 20 • The total dissolved solids (TDS) concentration in the groundwater is over
21 140,000 mg/L, which is significantly greater than the required 10,000 mg/L
22 for drinking water standards, therefore, the groundwater is not reasonably
23 expected to become a supply of drinking water. Furthermore, it would be
24 economically or technologically impractical to render the water fit for human
25 consumption; and
- 26 • The groundwater produces a mineral fluid (lithium brine) which exists in
27 concentrations that support commercial production and that releases by the
28 facility will not affect this production.

1 See Chemetall Foote Fact Sheet (attached as Exhibit 3) at p. 2. Therefore, the groundwater
2 beneath the Facility fails to meet drinking water standards based on the natural occurrence of
3 minerals in the area. *Id.*

4 **C. THE SPAHAC's APPEAL FAILS TO ALLEGE GROUNDS TO MODIFY OR**
5 **DENY THE PERMIT AND MUST BE DISMISSED ON THAT BASIS**

6 **1. None Of SPAHAC's Constitutional Or Statutory Rights Have Been**
7 **Violated By Renewal Of The Permit**

8 In its appeal, SPAHAC alleges that issuance of the Permit violates its constitutional or
9 statutory rights. See Form 3, Section 3 (boxes checked). However, SPAHAC fails to identify
10 the rights it alleges were violated or how the rights have been violated. See Form 3, Section
11 4 (no constitutional right or statute or regulation identified) and Section 5 (referring to Section
12 4). In attached pages, SPAHAC refers to its inalienable rights and cites to its rights in
13 "[a]cquiring, [p]ossessing and [p]rotecting property and pursuing and obtaining safety and
14 happiness." See Notice dated August 18, 2012, attached to Form 3 (hereinafter referred to
15 as "Notice") at p. 1. SPAHAC goes on to assert that the "Permit is void on its face because it
16 grants authority allowing the tainting of water and lands that residents drink, cook and bathe
17 in, and land that residents live and grow food on, and children PLAY on and in." Notice at p.
18 2. It appears then, that SPAHAC alleges that the Permit violates its inalienable rights to enjoy
19 its property by allowing that property to be contaminated. This argument fails for a few
20 primary reasons.
21

22 First, the land upon which the Permitted Facility is based does not belong to SPAHAC.
23 Rather, approximately 90% of the land, or 5,960 acres, is private and approximately 10% of
24 the land, or 657 acres, is public. There is no indication from the appeal as to how the Facility
25 on land which SPAHAC does not own interferes with SPAHAC's inalienable rights to acquire,
26 possess and protect its own land. Second, the Permit explicitly prohibits any degrading
27 activity because it prohibits any release or discharge from the fluid management system of
28

1 the Facility. Therefore, at a minimum, the Permit meets the statutory requirements for
2 protecting the health of the public and environment. Third, the groundwater beneath the
3 Facility is already exempt from regulation because it is not fit for human consumption and
4 naturally produces the brine that the Facility concentrates. Accordingly, even in the event of
5 an accidental release or discharge, the groundwater beneath the Facility is already exempted
6 from drinking water standards due to the naturally elevated concentration of minerals in the
7 groundwater. In addition, the Permit requires frequent and extensive monitoring and reporting
8 of the environment such that any potential degradation of the waters of the State will be
9 immediately detected and "additional actions, assessments or evaluations may be required by
10 the State." See Permit at Section II.B.
11

12 NDEP is authorized under NRS 445A.300 through 445A.730 to renew the Permit. No
13 constitutional or other violation exists in NDEP's renewal of the permit, particularly here,
14 where the Permit prohibits any release or discharge of fluids, and where the groundwater is
15 already not fit for consumption. The Permit prohibits exactly what SPAHAC argues it does
16 not—degradation of the waters of the State. As such, the Permit cannot be in violation of
17 inalienable rights as asserted by SPAHAC.
18

19 **2. The Permit Was Not Renewed By Unlawful Procedure Or Affected By** 20 **Other Error Of Law**

21 Although SPAHAC checked the boxes in its Form 3 stating that its grounds for appeal
22 included "final decision made upon unlawful procedure" and "final decision was affected by
23 other error of law," it fails to identify anywhere in its Appeal papers what the alleged unlawful
24 procedures were or what error of law was made. The only reference SPAHAC made to any
25 violation of law is the vague reference to the alienation of rights issue addressed above,
26 which cannot support a modification or denial of the permit. NDEP followed the statutory
27 requirements for renewal of the Permit, including proper notice of the application and renewal
28 and consideration of public comment. NDEP is not in a position to guess what laws SPAHAC

1 believes NDEP violated with respect to renewing the Permit, and SPAHAC has failed to meet
2 its burden of identifying any such violation.

3 **3. NDEP's Renewal Of The Permit Was Not Clearly Erroneous, Arbitrary Or**
4 **Capricious Or Characterized By Abuse Of Discretion**

5 SPAHAC also checked the boxes on its Form 3 alleging that its grounds for appeal
6 include that the "final decision was clearly erroneous in view of the reliable, probative and
7 substantial evidence on the whole record" and, "the final decision was arbitrary or capricious
8 or characterized by abuse of discretion." See Form 3. Again, SPAHAC has failed to identify
9 any facts that support these claims as a basis for modification or denial of the Permit.

10 The only assertion that remotely fits within the scope of these claims is the assertion
11 that "NDEP has failed to provide timely information as requested" by SPAHAC with respect to
12 water and soil test results. See Demand Objection at pp. 1-2. However, even if NDEP had
13 failed to provide the test results as alleged by SPAHAC—which is not supported by any
14 evidence—that would not be a proper basis for appeal of the renewal of the Permit. Instead,
15 if a proper public records request to NDEP for this information was not timely or appropriately
16 responded to, then that would be an action for violation of the Public Records Request Act,
17 not an action subject to review by the SEC on appeal of water pollution control permit.

18 Further, the alleged test results do not affect the validity of the Permit. As the permit
19 instructs, degradation of the waters of the State is prohibited. Therefore, even if test results
20 showed degradation, of which there is no evidence, it would be a violation of the Permit. The
21 Permit further provides that if releases or discharges occur such that the waters are at risk of
22 being degraded, then NDEP will require additional action to prevent and correct the risk. See
23 Permit at Sections I.A, I.D and II.B. Nothing about these requirements are erroneous,
24 arbitrary, capricious, or an abuse of discretion. Rather, these requirements are exactly what
25 SPAHAC appears to be demanding.

26 **D. CONCLUSION**

27 For the foregoing reasons, NDEP respectfully requests that the appeal be dismissed.
28 Should the SEC entertain an evidentiary hearing on this matter, NDEP requests that a briefing

1 schedule be ordered, including dates for an opening brief by SPAHAC and a response brief
2 by NDEP.

3 DATED this 20th day of September, 2012.

4 CATHERINE CORTEZ MASTO
5 Attorney General

6 By:


7 CASSANDRA P. JOSEPH
8 Deputy Attorney General
9 100 N. Carson Street
10 Carson City, NV 89701

11 *Attorneys for the State of Nevada*

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Attorney General's Office
100 N. Carson Street
Carson City, Nevada 89701-4717

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CERTIFICATE OF SERVICE

I, Cynthia Beebe, certify that I am an employee of the Office of the Attorney General, State of Nevada, and that on this 20th day of September 2012, I deposited for mailing a true and correct copy of the foregoing **NEVADA DIVISION OF ENVIRONMENTAL PROTECTION'S MOTION TO DISMISS APPEAL, OR ALTERNATIVELY, FOR BRIEFING SCHEDULE**, via United States Postal Service in Carson City, Nevada, by first class mail, postage prepaid, to the following:

John Walker, State Environmental Commission
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701-5249
jbwalker@ndep.nv.gov

Paul and Ana C. Rupp
PO Box 125
Silver Peak, Nevada 89047
silverpeakitis@msn.com

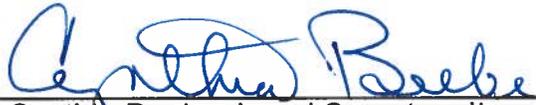

Cynthia Beebe, Legal Secretary II

EXHIBIT 1

EXHIBIT 1

NOTICE

August 18, 2012

VIA E-Mail and USPS Certified Mail # 7007 0710 0001 5249 4285

Nevada Environmental Commission
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701-5249
jbwalker@ndep.nv.gov
jboomhower@ndep.nv.gov
rkuczyns@ndep.nv.gov

Re: **1. Notice and Objection, Proposed Adoption of
Silver Peak Lithium Project (Chemetal Foots)
WPC Permit No. NEV0070005**

2. NV Environmental Commission Appeal Form # 3

Dear Commissioners,

Please find ATTACHED our NV Environmental Commission Appeal Form # 3 in
JPG form.

It is our position that for the Commission and its Departments to act to prepare a
Permit over a period of (many) months, unilaterally adopt it, and issue it as a Notice,
then expect a resident to gather, review, analyze, prepare and deliver the Appeal Form
3 WITHIN A MERE TEN DAYS TIME is unconscionable, self-serving and contrary to
law.

Our underlying basis in law is from the U.S. Constitution and the Nevada
Constitution

The U.S. Constitution states in important part:

"The powers not delegated to the United States by the Constitution, nor
prohibited by it to the States, are reserved to the States respectively, or to the people..
Amendment 10"

Specifically, NO entity of the State or federal government has lawful authority to
grant a license that allows subversion of "Inalienable Rights."

The Nevada Constitution states in important part:

Section. 1. Inalienable rights. All men are by Nature free and equal and have
certain inalienable rights among which are those of enjoying and defending life and

*P. Rupp
13125 SP NV 89047*

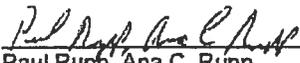
liberty; Acquiring, Possessing and Protecting property and pursuing and obtaining safety and happiness[.]

Sec. 2. Purpose of government; paramount allegiance to United States. All political power is inherent in the people[.] Government is Instituted for the protection, security and benefit of the people; and they have the right to alter or reform the same whenever the public good may require it. But the Paramount Allegiance of every citizen is due to the Federal Government in the exercise of all its Constitutional powers as the same have been or may be defined by the Supreme Court of the United States; and no power exists in the people of this or any other State of the Federal Union to dissolve their connection therewith or perform any act tending to impair[.] subvert, or resist the Supreme Authority of the government of the United States.

However, it has been long held as positive law that any action that "is repugnant to the Constitution" is VOID before the ink dries.

Therefore, subject Permit is void on its face because it grants authority allowing "the tainting of water and lands that residents drink, cook and bathe in, and land that residents live and grow food on, and children PLAY on and in!

Sincerely,



Paul Rupp, Ana C. Rupp
Box 125
Silver Peak Nevada 89047
silverpeakitls@msn.com

Dehnert Queen
10500 Christenson Rd
Lucerne Valley, CA 92356
dehnertqueen@desertamerican.com

cc: , Esmeralda County Interim District Attorney
Esmeralda County Highway Commission
Esmeralda County Land Use Advisory Committee
Distribution List

Attachments: Page 1 and 2 of Appeal Form 3

Ref: Appeal Form #3 to Mr Walker, Nevada Environmental Commission-081812.rtf

NOTICE DEMAND OBJECTION-NO HEALTH SAFETY PROTECTIONS Provided under NEV0070005 Permit renewal for people/animals, including small children living and or playing within 1500 feet of Chemetall-Rockwood Lithium Process Facility near Silver Peak Nevada

August 18, 2012

Sent Via e-mail, fax and certified USPS mail #7007 0710 0001 5249 4285

Fax-775.687.5856 and-jbwalker@ndep.nv.gov

Nevada Environmental Commission

901 South Stewart Street, Suite 4001

Carson City, Nevada 89701-5249

jbwalker@ndep.nv.gov

jboomhower@ndep.nv.gov

rkuczyns@ndep.nv.gov

Re: 1. Notice and Objection, Proposed Adoption of

Silver Peak Lithium Project (Chemetal Foote)

WPC Permit No. NEV0070005

2. NV Environmental Commission Appeal Form # 3

Objection is made to Nevada Dept. of Environmental Protection (NDEP) against Renewal of NEV00070005 water Pollution Control Permit as NDEP has failed to provide timely information as requested to concerned and impacted home owners Paul, Ana Rupp living within 1500 feet of Silver Peak Lithium Operations.

Good faith is by NDEP is absent regarding soil sample testing results and test monitor well results of and for contaminated earth through scheduled and unscheduled saturations of Lithium Process water Discharges/releases since 1966 of suspected pollution including Lithium Hydroxide Anhydrous solutions is readily available, i.e., e-mail/cd/documents, to home owners Paul Rupp, Ana Rupp. It is Chemetail-Rockwood Lithium and Nevada Dept. Of Environmental Protection responsibilities to insure no poisons are released to earth near Paul, Ana Rupp's homes and parcel's that continue to blow and drift as dust in the wind towards our homes, persons, pets and animals.

P. Rupp
13125 SP NV
89049 1

Spills over and above 500 gallons of Lithium Hydroxide Anhydrous/Lithium Carbonate solutions continue to occur flowing into the park/playground where unsuspecting young children play in contaminated soil and within 150 feet of Paul, Ana Rupp's homes, vehicles, evaporative coolers, gardens, pets and animals.

We have and hold the same rights as other people living near Silver Peak to a clean environment free of being terrorized by unscheduled releases of poisons so near our homes with the threat of unknown and unhealthy consequences.

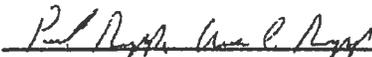
The burden of NEV00070005 is not up to the Rupp's; clearly the legal responsibility is Chemetal/Rockwood Lithium and Nevada Dept. of Environmental Protection to insure a safe environment regardless of cleverly Wordsmith responses by NDEP, contrary to due process, health and safety concern issues. Demand is made to provide basic soil/water test results and follow due process.

Paul and Ana Rupp, Dehnert Queen, continue to have a filed and timely valid formal response meeting all standards of the published NOTICED NEV0070005 in the Tonopah Times/Goldfield News Newspapers.

No exact legal binding authority has been provided to Paul Rupp, Ana Rupp and Dehnert Queen for returning our appeal for NEV0070005?

We continue to ask whose health and safety is Nevada Dept. of Environment Protection looking out for by failing to provide the most basic information on soil and monitor well contamination occurring from all discharges of water releases from and by Cyprus Foote/ Chemetal-Rockwood Lithium near our homes and in unlawfully returning our timely filed valid appeal?

Sincerely,



Paul Rupp, Ana C Rupp

Using PO Box 125 Silver Peak NV 89047



FORM 3: FORM FOR REQUESTING AN APPEAL HEARING
 (Provide attachments as needed)

1. Name, address, telephone number, and signature of appellant:

Name: Paul & Ana Rupp, Dehnert Queen

Physical Address: P.O. Box 125, Silver Peak, Nv 89047

E-mail Address: silverpeaklts@msn.com

Telephone Number: 775-741-1890

Signature: *Paul Rupp and Ana Rupp*
 1st Paul & Ana Rupp, Dehnert Queen

Representative capacity (if applicable): Co-Founder, Silver Peak Ad Hoc Advisory Committee

2. Attach copy of Nevada Division of Environmental Protection final decision, such as permit or notice of alleged violation, being appealed.

3. Specify grounds of appeal: (check all that apply)

- Final decision in violation of constitutional or statutory provision;
- Final decision made upon unlawful procedure;
- Final decision was affected by other error of law;
- Final decision was clearly erroneous in view of the reliable, probative and substantial evidence on the whole record;
- Final decision was arbitrary or capricious or characterized by abuse of discretion;

4. For each ground of appeal checked above, please list the constitutional, Nevada Revised Statute (NRS), and/or Nevada Administrative Code (NAC) provision allegedly violated. Also list the statutes and/or or regulations that give the State Environmental Commission jurisdiction to hear the appeal.

As the scale and scope of the pending permit is very complex, is not the purpose of this form to establish a date certain for the hearing?

It is our position that the NVDEP has had MONTHS to prepare its Permit, our responding at the date of the hearing is reasonable, thus we will deliver our detailed report ten days before said hearing, for review and OPEN DISCUSSION by the Board.

Please advise by e-mail as to the Date, Time and Location of the hearing.

5. For each ground of appeal checked above, provide a brief and concise statement of the facts which provide the basis for the appeal.

See Item 4, above.

Date of Request: August 18, 2012

Send Form to: Executive Secretary, State Environmental Commission, 901 South Stewart Street, Suite 4001, Carson City, NV 89701

P. Rupp
13125
SP NV
49047

EXHIBIT 2

EXHIBIT 2

STATE OF NEVADA

Department of Conservation and Natural Resources
Division of Environmental Protection
Bureau of Mining Regulation and Reclamation

Water Pollution Control Permit

Permittee: **Chemetall Foote Corporation
Silver Peak Lithium Project
P.O. Box 98
Silver Peak, NV 89047**

Permit Number: **NEV0070005 (Renewal 2012, Revision 00)**

Pursuant to Nevada Revised Statutes (NRS) 445A.300 through 445A.730, inclusive, and regulations promulgated thereunder by the State Environmental Commission and implemented by the Division of Environmental Protection (the Division), this permit authorizes the Permittee to construct, operate, and close the Silver Peak Lithium Project, in accordance with the limitations, requirements and other conditions set forth in this permit. The Permittee is authorized to process up to 6,000 tons of ore annually using chemicals.

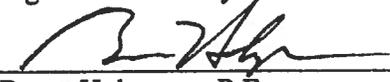
The facility is located in Esmeralda County within portions of Sections 26 through 28, Township 1 South, Range 40 East; Sections 1, 12, 13, and 21 through 25, Township 2 South, Range 39 East; and Sections 1 through 11, 15 through 20, and 29 through 32, Township 2 South, Range 40 East, Mount Diablo Baseline and Meridian, approximately 40 miles southwest of Tonopah, near the town of Silver Peak.

The Permittee must comply with all terms and conditions of this permit and all applicable statutes and regulations.

This permit is based on the assumption that the information submitted in the application of January 20, 1990, as modified by subsequent approved amendments, is accurate and that the facility has been constructed and is being operated as specified in the application. The Permittee must inform the Division of any deviation from or changes in the information in the application, which may affect the Permittee's ability to comply with applicable regulations or permit conditions.

This permit is effective as of **June 22, 2012**, and shall remain in effect until **March 23, 2017**, unless modified, suspended, or revoked.

Signed this 7th day of **June 2012**.



Bruce Holmgren, P.E.
Chief, Bureau of Mining Regulation and Reclamation

I. Specific Facility Conditions and Limitations

A. In accordance with operating plans and facility design reviewed and approved by the Division the Permittee shall:

1. Construct, operate, and close the facility in accordance with those design plans;
2. Contain within the fluid management system all process fluids including all meteoric waters which enter the system as a result of the 25-year, 24-hour storm event; and
3. Not release or discharge any process or non-process contaminants from the fluid management system.

B. Schedule of Compliance (None):

C. The fluid management system covered by this permit consists of the following process components:

1. Process plants including, but not limited to, all tanks (e.g. tank farm and acid tanks), basins, sumps, pumps, and piping necessary to connect components of the process facility;
2. Evaporation ponds, liming facility and the R-2 pond; and
3. Transfer pipes, ditches, valves, and pumps used in conveyance, control or detection of process fluids between process components.

D. Monitoring Requirements

<u>Identification</u>	<u>Parameter</u>	<u>Frequency</u>
1. Fresh Water Well (WS)	Profile I ¹ and static water elevation, feet amsl	Quarterly
2. Monitoring well adjacent to the R-2 Pond (R-2W)	Profile I ¹ and static water elevation level, feet amsl	Quarterly
3. R-2 Pond (R-2)	Minimum freeboard, feet	Quarterly
4. Lithium hydroxide plant waste stream (HPWS)	Profile II ²	Annually
5. Lithium carbonate plant waste stream (CPWS)	Profile II ²	Annually
6. Brine well ³ (BW)	Profile II ² and static water elevation, feet amsl	Annually
7. Plant influent (PI)	Profile II ²	Annually

<u>Identification</u>	<u>Parameter</u>	<u>Frequency</u>
8. Petroleum Contaminated Soil (PCS) Screening Analyses: Each temporary holding pad cell, by PCS source type	VOCs ⁴ , SVOCs ⁵ , TPH ⁶	Prior to removal ⁷
9. PCS Hazardous Waste Determinations: Each PCS source	Hazardous waste determination ⁸	When required ⁸
10. PCS Management: Each temporary holding pad, treatment cell, and disposal location, by PCS source type	PCS volume added, volume removed and destination, total volume present (cubic yards)	Quarterly

The Permittee may request a reduction in the number of elements and frequency of analyses after four (4) quarters of complete monitoring based on justification other than cost. Such reductions may be considered formal modifications to the permit.

Abbreviations:

amsl = above mean sea level; S.U. = standard units

Footnotes:

(1) Profile I:

Alkalinity (as CaCO ₃)	Cadmium	Magnesium	Selenium
Bicarbonate	Calcium	Manganese	Silver
Total	Chloride	Mercury	Sodium
Aluminum	Chromium	Nickel	Sulfate
Antimony	Copper	Nitrate+Nitrite (Total as N)	Thallium
Arsenic	Fluoride	Nitrogen (Total as N)	Total Dissolved Solids
Barium	Iron	pH (± 0.1 S.U.)	Zinc
Beryllium	Lead	Potassium	

(2) Profile II includes Profile I plus the following:

Bismuth	Gallium	Phosphorus (Total)	Tin
Boron	Lithium	Scandium	Titanium
Cobalt	Molybdenum	Strontium	Vanadium

- (3) A different production (brine) well shall be sampled each year.
 - (4) Volatile Organic Compounds (VOCs) analyzed by EPA Method 8260B.
 - (5) Semi-Volatile Organic Compounds (SVOCs) analyzed by EPA Method 8270D.
 - (6) Total Petroleum Hydrocarbons (TPH) analyzed by EPA Method 8015 Modified. If any gasoline-range petroleum is suspected, or if the source-type is unknown, both TPH-P (purgeable) and TPH-E (extractable) are required. Otherwise, only TPH-E is required.
 - (7) Each segregated source type of PCS must be sampled separately pursuant to the approved sample collection protocol. For temporary holding pad cells, analyses are required only in quarters when PCS removal from the pad is anticipated. Removal to an approved on-site disposal location is authorized if PCS meets screening levels.
 - (8) A hazardous waste determination is required: a) Initially, for each PCS source prior to management under the PCS Management Plan; b) When a PCS waste stream is suspected to have changed character since the last determination; and c) When a hazardous constituent is detected during screening analyses at a concentration suggestive of hazardous waste. Determinations must be performed pursuant to 40 CFR 262.11 using operator knowledge and/or applicable analytical testing methods described in EPA publication SW-846. Operator knowledge must be adequately described and sufficient to justify the determination.
- E. Quarterly and annual monitoring reports and spill reporting shall be in accordance with Part II.B.
- F. All sampling and analytical accuracy shall be in accordance with Part II.E.
- G. Permit Limitations
1. A minimum of two (2) feet of freeboard shall be maintained in the R-2 Pond at all times. All other ponds must maintain a freeboard of one foot.
 2. PCS that exceeds screening levels shall not be placed at an on-site disposal location.
 3. Failure to meet a Schedule of Compliance date.
- Exceedences of these limitations may be permit violations and shall be reported as specified in Part II.B.4.
- H. The facility shall maintain an automated device or a calibrated rain gauge, which shall be monitored daily, to record daily precipitation. A written record of all daily accumulations of precipitation shall be maintained on site.
- I. The Permittee shall inspect all control devices, systems and facilities weekly. Drainage and containment systems shall also be inspected during, when possible, and after major storm events. These inspections are performed to detect evidence of:

1. Deterioration, malfunction, or improper operation of control systems;
 2. Sudden changes in the level of the contents of any monitoring device;
 3. Severe erosion or other signs of deterioration in dikes, diversions, or other containment devices.
- J. Prior to initiating permanent closure activities at the facility or any process component within the facility, the Permittee must have an approved final permanent closure plan.
- K. The Permittee shall remit an annual review and services' fee in accordance with NAC 445A.232 starting July 1 after the effective date of this permit and every year thereafter until the permit is terminated or the facility has received final closure certification from the Division.
- L. The Permittee shall not dispose of or treat PCS on the mine site except as authorized by the approved PCS Management Plan. The approved PCS Management Plan, and the Division's Guidance for Mine-Site PCS Management Plans, are hereby incorporated into this permit by reference.

II. General Facility Conditions and Limitations

A. General Requirements

1. The Permittee shall achieve compliance with the conditions, limitations, and requirements of the permit upon commencement of each relevant activity. The Administrator may, upon the request of the Permittee and after public notice (if required), revise or modify a Schedule of Compliance in an issued permit if he determines good and valid cause (such as an act of God, a labor strike, materials shortage or other event over which Permittee has little or no control) exists for such revision.
2. The Permittee shall at all times maintain in good working order and operate as efficiently as possible, all devices, facilities, or systems installed or used by the Permittee to achieve compliance with the terms and conditions of this permit.
3. Whenever the Permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Administrator, the Permittee shall promptly submit such facts or correct information. Any inaccuracies found in this information may be grounds for revocation or modification of this permit and appropriate enforcement action.

B. Reporting Requirements

1. The Permittee shall submit quarterly reports which are due to the Division on or before the 28th day of the month following the quarter and must contain the following:
 - a. Monitoring results from those locations identified in Parts I.D.1, I.D.2, and I.D.3;

- b. Analytical results of the solution collected from monitoring locations identified in Parts I.D.1 and I.D.2 reported on NDEP Form 0190 or equivalent;
- c. A record of spills and releases, and the remedial actions taken in accordance with the approved Emergency Response Plan on NDEP Form 0490 or equivalent;
- d. Analytical results, copies of hazardous waste determinations, and monitoring results, identified in Parts I.D.8, I.D.9, and I.D.10, pertaining to the approved PCS Management Plan; and
- e. An updated list of all PCS sources managed under the approved PCS Management Plan, with any new or changed sources highlighted, reported on NDEP Form PCS-01 or equivalent; current screening levels for each on-site disposal location; and a detailed explanation of any revisions to screening levels.

Facilities which have not initiated mining or construction, must submit a quarterly report identifying the status of mining or construction. Subsequent to any noncompliance or any facility expansion which provides increased capacity, the Division may require an accelerated monitoring frequency.

2. The Permittee shall submit an annual report by February 28th of each year, for the preceding calendar year, which contains the following:
 - a. Analytical results of the solution collected from monitoring locations identified in Parts I.D.4, I.D.5, I.D.6, and I.D.7;
 - b. Monitoring results from those locations identified in Part I.D.6;
 - c. A synopsis of spills and releases on NDEP Form 0390 or equivalent;
 - d. A brief summary of site operations, including the number of tons of ore processed during the year, construction and expansion activities and major problems with the fluid management system;
 - e. A table of total monthly precipitation amounts reported for the five-year history previous to the date of submittal;
 - f. An updated version of the facility monitoring and sampling procedures and protocols;
 - g. An updated evaluation of the closure plan using specific characterization data for each process component with respect to achieving stabilization; and
 - h. Graphs of leak detection flow rates, pH, total dissolved solids (TDS), sulfate as SO₄, chloride, nitrate + nitrite (Total as N), fluoride, zinc, and arsenic concentration (as applicable), versus time for all fluid sampling points. These graphs shall display a five-year history previous to the date of submittal. Additional constituents may be required by the Division if deemed necessary.

3. Release Reporting Requirements: The following applies to facilities with an approved Emergency Response Plan. If a site does not have an approved Emergency Response Plan, then all releases must be reported as per NAC 445A.347 or NAC 445A.3473, as appropriate.
 - a. A release of any quantity of hazardous substance, as defined at NAC 445A.3454, to surface water, or that threatens a vulnerable resource, as defined at NAC 445A.3459, must be reported to the Division as soon as practicable after knowledge of the release, and after the Permittee notifies any emergency response agencies, if required, and initiates any action required to prevent or abate any imminent danger to the environment or the health or safety of persons. An oral report shall be made by telephone to 888-331-6337 for in-State callers or (775) 687-9485 for out-of-State callers, and a written report shall be provided within ten (10) days in accordance with Part II.B.4.b.
 - b. A release of a hazardous substance in a quantity equal to or greater than that which is required to be reported to the National Response Center pursuant to 40 Code of Federal Regulations (CFR) Part 302 must be reported as required by NAC 445A.3473 and Part II.B.3.a.
 - c. A release of a non-petroleum hazardous substance not subject to Parts II.B.3.a. or II.B.3.b., released to soil or other surfaces of land, and the quantity is equal to or exceeds 500 gallons or 4,000 pounds, or that is discovered in or on groundwater in any quantity, shall be reported to the Division no later than 5 P.M. of the first working day after knowledge of the release. An oral report shall be made by telephone to 888-331-6337 for in-State callers or (775) 687-9485 for out-of-State callers, and a written report shall be provided within ten (10) days in accordance with Part II.B.4.b. Smaller releases, greater than 25 gallons or 200 pounds and less than 500 gallons or 4,000 pounds, released to soil or other surfaces of land, or discovered in at least three cubic yards of soil, shall be reported quarterly on NDEP Form 0390 or equivalent.
 - d. Petroleum Products and Ethylene Glycol: If a release is subject to Parts II.B.3.a. or II.B.3.b., report as specified in Part II.B.3.a. Otherwise, if a release of any quantity is discovered on or in groundwater, or if the quantity is equal to or greater than 100 gallons released to soil or other surfaces of land, report as specified in Part II.B.3.c. Smaller releases, greater than 25 gallons but less than 100 gallons, released to soil or other surfaces of land, or if discovered in at least three cubic yards of soil, shall be reported quarterly on NDEP Form 0390 or equivalent.
4. The Permittee shall report to the Administrator any noncompliance with the permit.
 - a. Each such event shall be reported orally by telephone to (775) 687-9400, not later than 5 P.M. of the next regular work day from the time the

Permittee has knowledge of the circumstances. This report shall include the following:

- i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident, condition, or circumstance;
 - iv. If reportable hazardous substances were released, identify material and report total gallons and quantity of contaminant;
 - v. Human and animal mortality or injury;
 - vi. An assessment of actual or potential hazard to human health and the environment outside the facility; and
 - vii. If applicable, the estimated quantity of material that will be disposed and the disposal location.
- b. A written summary shall be provided within ten (10) days of the time the Permittee makes the oral report. The written summary shall contain:
- i. A description of the incident and its cause;
 - ii. The periods of the incident (including exact dates and times);
 - iii. If reportable hazardous substances were released, the steps taken and planned to complete, as soon as reasonably practicable, an assessment of the extent and magnitude of the contamination pursuant to NAC 445A.2269;
 - iv. Whether the cause and its consequences have been corrected, and if not, the anticipated time each is expected to continue; and
 - v. The steps taken or planned to reduce, eliminate, and prevent recurrence of the event.
- c. The Permittee shall take all available and reasonable actions, including more frequent and enhanced monitoring to:
- i. Determine the effect and extent of each incident;
 - ii. Minimize any potential impact to the waters of the State arising from each incident;
 - iii. Minimize the effect of each incident upon domestic animals and all wildlife; and
 - iv. Minimize the endangerment of the public health and safety which arises from each incident.
- d. If required by the Division, the Permittee shall submit, as soon as reasonably practicable, a final written report summarizing any related actions, assessments, or evaluations not included in the report required in Part II.B.4.b., and including any other information necessary to determine

and minimize the potential for degradation of waters of the State and the impact to human health and the environment. Submittal of the final report does not relieve the Permittee from any additional actions, assessments, or evaluations that may be required by the Division.

C. Administrative Requirements

1. A valid permit must be maintained until permanent closure is complete. Therefore, unless permanent closure has been completed, the Permittee shall apply for permit renewal not later than one-hundred twenty (120) days before the permit expires.
2. Except as required by NAC 445A.419 for a permit transfer, the Permittee shall submit current permit contact information described in paragraphs (a) through (c) of subsection 2 of NAC 445A.394 within thirty (30) days after any change in previously submitted information.
3. All reports and other information requested by the Administrator shall be signed and certified as required by NAC 445A.231.
4. When ordered consistent with Nevada Statutes, the Permittee shall furnish any relevant information in order to determine whether cause exists for modifying, revoking and reissuing, or permanently revoking this permit, or to determine compliance with this permit.
5. The Permittee shall maintain a copy of, and all modifications to, the current permit at the permitted facilities at all times.
6. The Permittee is required to retain during operation, closure and post-closure monitoring, all records of monitoring activities and analytical results, including all original strip chart recordings for continuous monitoring instrumentation, and all calibration and maintenance records. This period of retention must be extended during the course of any unresolved litigation.
7. The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not thereby be affected.
8. The Permittee is authorized to manage fluids and solid wastes in accordance with the conditions of this permit. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of Federal, State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under the Water Pollution Control Statutes for releases or discharges from facilities or units not regulated by this permit. NRS 445A.675 provides that any person who violates a permit condition is subject to administrative or judicial action provided in NRS 445A.690 through 445A.705.

D. Division's Authority

The Permittee shall allow authorized representatives of the Division, at reasonable times, and upon the presentation of credentials to:

1. Enter the Permittee's premises where a regulated activity is conducted or where records are kept per the conditions of this permit;
2. Have access to and copy any record that must be kept per the conditions of this permit;
3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated by this permit; and
4. Sample or monitor for any substance or parameter at any location for the purposes of assuring permit and regulatory compliance.

E. Sampling and Analysis Requirements

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. For each measurement or sample taken pursuant to the conditions of this permit, the Permittee shall record the following information:
 - a. The exact place, date, and time of the inspection, observation, measurement, or sampling; and
 - b. The person(s) who inspected, observed, measured, or sampled.
3. Samples must be taken, preserved, and labeled according to Division approved methods.
4. Standard environmental monitoring chain of custody procedures must be followed.
5. Samples shall be analyzed by a laboratory certified by the State of Nevada. The Permittee must identify the certified laboratory used to perform the analyses, laboratory reference number, sample date and laboratory test date in quarterly and annual reports.
6. The accuracy of analytical results, unless otherwise specified, shall be expressed in mg/L and reliable to at least two (2) significant digits. The analytical methods used must have a lower level of detection equal to or less than one-half the reference value for Profile I constituents. Profile II constituents that have established reference values shall be quantified using an analytical method with a lower level of detection equal to or less than the reference value.

F. Permit Modification Requirements

1. Any material modification must be reported by submission of a new application, or, if such changes will not violate the limitations specified in the permit, by notice to the permit issuing authority of such changes. Any change which materially modifies, as defined in NAC 445A.365, the permitted

facility must comply with NAC 445A.392, NAC 445A.4155, NAC 445A.416, and NAC 445A.417.

2. Prior to the commencement of mining activities at any site within the State which is owned or operated by the Permittee but not identified and characterized in the application, the Permittee shall submit to the Division a report which identifies the locations of the proposed mine areas and waste disposal sites, and characterizes the potential of mined materials to release pollutants. Prior to development of these areas the Division shall determine if any of these new sources will be classified as process components and require engineered containment as well as permit modification.
3. The Permittee must notify the Division in writing at least thirty (30) days before the introduction of process solutions into a new process component or into an existing process component which has been materially modified, or of the intent to commence active operation of that process component.
4. The Permittee must obtain a written determination from the Administrator of any planned material modification(s) as to whether it is considered a permit modification.
5. The Permittee must give advance notice to the Administrator of any planned changes or activities which are not material modifications in the permitted facility that may result in noncompliance with permit requirements.

Prepared by: Rob Kuczynski, P.E.
Date: June 7, 2012
Permit Revision 00: Permit and Fact Sheet Renewal 2012.
(Fact Sheet Revision 00)

EXHIBIT 3

EXHIBIT 3

FACT SHEET
(pursuant to NAC 445A.401)

Permittee Name: **Chemetall Foote Corporation**
Project Name: **Silver Peak Lithium Project**
Permit Number: **NEV0070005 (Permit Renewal 2012, Rev. 00)**

A. Description of Facility

Location: The Silver Peak Lithium Project (SPLP) is located in Esmeralda County, within portions of Sections 26 through 28, Township 1 South, Range 40 East; Sections 1, 12, 13, and 21 through 25, T2S, R39E; and Sections 1 through 11, 15 through 20, and 29 through 32, T2S, R40E, Mount Diablo Baseline and Meridian, approximately 40 miles southwest of Tonopah, near the town of Silver Peak.

Chemetall Foote Corporation is the current Permittee of Record for the SPLP and is authorized to process up to 6,000 tons of ore annually using chemicals.

The SPLP is located within the Clayton Playa, a closed hydrological basin. The project occupies approximately 6,617 acres, of which 5,960 acres is private land owned or leased to the Permittee and 657 acres on public land administered by the BLM-Battle Mountain District, Tonopah Field Office.

Site Access: From Hawthorne, proceed east then south on U.S. Route (U.S.)-95, 63 miles to Coaldale Junction/U.S.-6; proceed east on U.S.-95/U.S.-6 six miles to the junction of State Route (S.R.)-265/Nivlock Road; proceed south on S.R.-265, 21 miles through the town of Silver Peak to the Chemetall Foote Lithium Project--Administrative Offices, located on the south side of the road. The process facility is on the north side of the road and the brine operations are located approximately 3 miles east of Silver Peak on Silver Peak Road and occupy both the north and south sides of the road.

From Tonopah, proceed west on U.S.-95/U.S.-6 for a distance of 34 miles to the junction of S.R.-265/Nivlock Road; proceed west then south on S.R.-265 through the town of Silver Peak to the SPLP. In addition, access to the site is also possible via gravel/dirt roads from Tonopah and Goldfield.

Characteristics: The SPLP consists of numerous deep wells, solar evaporation ponds, lime sludge pond, process plant, stockpiled salt dumps and lime slakers. The groundwaters or subsurface brines of the Clayton Playa are essentially the "ore" for the SPLP, and typically average more than 139,000 mg/L total dissolved solids (TDS). Annual brine well production (extraction) is typically in the billions of gallons range. Annual lithium hydroxide and lithium carbonate plant feed is typically in the tens of

millions of gallons range and all processing, reagent storage, and fuel dispensing and storage is on concrete containment of at least 110 percent of the largest tank or vessel.

Production Limitation and Fee Category Designation: Mining facilities regulated by the Division, utilize a regulatory fee structure based on the annual ore production. Although the fee structure differentiates between facilities that use chemicals in their beneficiation process and those that do not (e.g. physical separation facility), there is no distinction between hardrock and solution mining.

For fee assessment purposes, the Division and Permittee have agreed upon a fee structure based on the annual ore processed, not the annual volume of lithium brine extracted. With an ore processing rate of 6,000 tons annually, the SPLP has been placed in the lowest fee category for chemical process facilities. Refer to the Division's May 1, 1997 letter to Cyprus Foote Mineral Company for additional details.

Regulatory Exemptions: Pursuant to Nevada Administrative Code (NAC) 445A.424, a facility, regardless of size or type, may not degrade the waters of the State to the extent that the quality of surface water is lowered below that allowed by Nevada Revised Statute (NRS) 445A.565 and groundwater quality is lowered below a State or Federal regulation prescribing standards for drinking water.

The Division has specifically exempted groundwater beneath the Clayton Playa from the drinking water standard standards for the following reasons:

- The total dissolved solids (TDS) concentration in the groundwater is greater than 10,000 mg/L and the groundwater is not reasonably expected to become a supply of drinking water. Furthermore, it would be economically or technologically impractical to render the water fit for human consumption; and
- The groundwater produces a mineral fluid (lithium brine) which exists in concentrations that support commercial production and that releases by the facility will not affect this production.

The Division has also exempted the Storm Water Permit requirement for the SPLP since any stormwater runoff from the facility discharges to a dry playa in a closed hydrological basin.

B. Synopsis

Background/History: Chemetail Foote Corporation and its predecessor companies have operated at the SPLP site since 1964. Division records indicate that National Pollutant Discharge Elimination System (NPDES) Permit NEV0070005 was first issued to the Foote Mineral Company in 1978 by the Division's Bureau of Water Pollution Control (BWPC). The Permit expired in 1982 and although a renewal application was submitted, the NPDES Permit renewal was delayed for a variety of reasons, including 1) BWPC permitting workload and priorities at the time; 2) Pending changes in the administration of the NPDES program and regulation implementation; and 3) the uncertain future

applicability of the SPLP to the NPDES regulations. In the interim, the facility was authorized to continue operation under the existing NPDES Permit.

Changes to NPDES regulatory criteria resulted in the elimination of NPDES Permit requirement for the SPLP in 1989. In its place, a new Water Pollution Control Permit (WPCP NEV0070005) would be issued. In addition, the Division's newly-formed Bureau of Mining Regulation and Reclamation (BMRR), was assigned permitting, monitoring, and compliance responsibility for the SPLP that year.

WPCP NEV0070005 was issued to the Permittee in 1992. In 1994, the Permit was modified for the construction of a lithium hydroxide monohydrate ($\text{LiOH}\cdot\text{H}_2\text{O}$) production facility which was completed in 1996. In 1998, the Permit was modified for the expansion of the lower tank farm in the lithium hydroxide monohydrate plant. In addition, there have been several Engineering Design Changes (EDCs), the most recent being the March 2011 incorporation of the Division-authorized Petroleum Contaminated Soil (PCS) Management Plan for the SPLP.

Current Operations: Lithium bearing brines are pumped from beneath the playa surface by a series of 42 production wells placed and operated to most efficiently recover the resource from the aquifer. The range of designed operation conditions for each well is dependent upon the aquifer and individual hydrology of the unit, with a total wellfield production of no more than twelve million gallons of lithium brine per day.

Exploration, well drilling and aquifer development are continuous throughout the operation. The brines produced from the wells enter the solar evaporating pond system, comprised of 28 evaporating ponds (unlined) of which 16 are currently active. Solar evaporation of the brines results in the precipitation of salts, primarily in the form of magnesium chloride (MgCl_2) and sodium chloride (NaCl) when the salt solution saturation levels are reached. The ponds are designed to operate with a brine depth of one to two feet, with one foot of freeboard, which equates to more than four times the 100-year, 24-hour storm event.

Evapoconcentration Pond Operations

Weak brine is delivered to the pond system for processing into plant feed material. Since the lithium concentration in the available subsurface brines is declining, adjustments are required in the downstream pond operations to continue to provide the process plant with high quality brine.

The weak brine enters the pond system, where the concentration of lithium is increased via solar evapoconcentration. Wherever possible, gravity flow is utilized throughout the system and by pumps where necessary.

When brine concentration reaches approximately a ten-fold increase in lithium it is necessary to remove magnesium from the brines. Magnesium is removed from the brines with the addition of slaked lime ($\text{Ca}(\text{OH})_2$) with water and adding the resultant lime

slurry to the brine in a two stage reactor system. The lime slaking operation is controlled by measuring the specific gravity of the slurry to insure that the proper ratio of water to lime is used for maximum efficiency. The lime addition rate is controlled by measuring the pH of the brine as it is discharged from the reactors.

The addition of slaked lime results in the production of a semi-solid mud, consisting mainly of magnesium hydroxide ($Mg(OH)_2$) and calcium sulfate ($CaSO_4$), which is deposited in the Lime Solids Pond. Decant and further evaporation of the treated brine results in the continued deposition of salts on the pond floors. When economically feasible, the salts are removed from the ponds and stockpiled in one of three piles located adjacent to the pond area. The discharged brine enters a series of nine small ponds known as the Strong Brine Complex (SBC) for evapoconcentration.

Lithium Carbonate Production

When the lithium concentration reaches levels suitable for Lithium Carbonate Plant feed, the brine is pumped from the SBC to the Lithium Carbonate Plant. Within the plant, the brine is discharged into one of two mixing tanks, where slaked lime and soda ash (Na_2CO_3) are added to remove any remaining magnesium and calcium, which would interfere with the precipitation of lithium carbonate (Li_2CO_3). This treatment results in the production of a semi-solid sludge composed primarily of magnesium hydroxide and calcium carbonate ($CaCO_3$). This mud is removed periodically from the treatment tanks and discharged into the Plant Waste Ditch (PWD), where it combined with other plant waste waters and discharged onto the playa surface near the western edge of the pond system.

The quantity of lime added is determined by the final solution pH, with the target value of 11.0. The quantity of soda ash solution added to each batch is determined by the treated brine calcium ion concentration, with a target value of 8 mg/L. The treated batches of brine are pumped into one of three settling tanks, where the precipitated calcium and magnesium muds are allowed to settle out. The settled brine is decanted through one of two plate and frame filter presses into the Clear Brine Surge Tank (CBST). The filter presses are pre-coated with a diatomite filter media.

The brine feed is pumped from the CBST on a continuous basis through the heat exchangers into the reactor system. The rate of brine feed (in gallons per minute) is based on lithium concentration and production requirements. The heat exchangers heat the brine to a temperature of 195° F.

The hot brine feed is split between the first two reactors in a ratio based on operating conditions and brine strength. Soda ash is added continuously to Reactor #1 by a weigh feeder at a rate controlled by plant instrumentation. The quantity of excess soda ash added is determined hourly by titration of the mother liquor from Reactor #3 with adjustments made accordingly. The product slurry overflowing Reactor #3 is pumped into a bank of cyclones, with the overflow from the cyclones discharged to the Settler Tank, for sedimentation. The Settler Tank under flow is pumped to another cyclone, and

the overflowed mother liquor is pumped to the pond system. The cyclone underflow slurry is spread over the extractor belt where the remaining mother liquor is removed by vacuum and pumped into the mother liquor line and returned to the ponds.

The product cake on the extractor is washed with hot, softened water to remove any contaminants left by the mother liquor. The water is removed from the cake by another vacuum pan and pumped into Reactor #1. The washed cake, containing about 20 percent moisture, is fed to a propane fired dryer, then air conveyed to the product bin and packaging warehouse.

Lithium Hydroxide Production

In the Lithium Hydroxide Plant, lithium carbonate is reacted with slaked lime to produce a lithium hydroxide solution and calcium carbonate solids. The calcium carbonate solids are separated by centrifuging, washed and moved to the playa for storage in the pond system. The lithium hydroxide solution is evaporated in a triple effect evaporator to precipitate the solid lithium hydroxide monohydrate ($\text{LiOH}\cdot\text{H}_2\text{O}$), which is dried and packaged for sales. A portion of the lithium hydroxide monohydrate is further processed into anhydrous lithium hydroxide (LiOH) for sales.

To further supplement lithium hydroxide production, the SPLP receives scrap lithium metal from the Permittee's Kings Mountain, North Carolina facility and from a toll producer for the purpose of producing lithium hydroxide solution. Scrap lithium metal is added to the non-potable brine ponds where it reacts to produce lithium hydroxide solution.

Lime is slaked with dirty condensate in the lime slaker, which feeds slurry to a reactor. Lithium carbonate is fed to the reactor in an approximate ratio of 1:1 with lime with the resulting slurry pumped to a series of digesters, which provide sufficient residence time for the reaction to go to completion. The concentration of LiOH and CO_2 in the slurry are measured to control the feed rates to the reactors and to adjust the lithium carbonate-lime ratio. CO_2 is a measure of the unreacted lithium carbonate, which if present will cause scaling in the evaporator tubes. The values are maintained by adjustments to the lime, lithium carbonate and make-up water feed rates.

Slurry overflow from Digester #4 pumped to Bird Centrifuge #1, where the LiOH bearing liquor is separated from the CaCO_3 muds. The liquor is sent to unfiltered storage, and the muds re-slurried with water and sent to Bird Centrifuge #2. The concentrate from the washing is sent to the reactor, and the muds re-slurried and returned to the playa. The purpose of the second centrifuge is to wash the mud to minimize the loss of lithium from the process. Total Li_2O in the muds should be maintained below 1.1 percent. The liquor from unfiltered storage is pumped through plate and frame filter presses to remove any remaining bits of solids. After leaving the presses, the liquor is sent to filtered storage for feeding to the Tripple Effect Evaporator (TEV).

In the TEV, water is removed from the liquor by evaporation under vacuum. Evaporation under vacuum allows boiling of the liquor at temperatures much lower than at

atmospheric pressure. Formation of lithium hydroxide crystals at temperatures above about 1500° F can result in the precipitation of the anhydrous form instead of the monohydrate.

A portion of the slurry from the recirculation system from the third effect of the evaporator is diverted to a hydrocyclone, where the thickened slurry is fed through a clarifier into the product centrifuge. The concentrate is removed and returned to the evaporator system. The product cake is washed with hot water, and delivered to the dryer. The dryer is of the steam-heated air rotary design, and both product and air temperature are controlled, as well as air humidity. The dried product is then transferred to the screening and packaging operation.

Control of drying conditions is critical to product quality in that under drying will produce a product which will cake in the package, and over drying will result in the formation of anhydrous lithium hydroxide on the surface of the product crystals which will produce dust when handling. Product from the dryer is passed through a Rotex screen to segregate by size fraction depending on customer needs and specifications. Over and undersize material is re-dissolved and returned to the evaporator system. Product is packaged after screening into appropriate containers, and sampled for final shipping analysis.

Product Packaging and Shipment

Product intended for is to be packaged for shipment to customers is transferred by pneumatic conveyors or feed screws to various packaging bins, depending on the product line. From the packaging bins the product is transferred into the packaging facility by mechanical conveyors. In the packaging facility the product may be packaged in a number of different containers, depending on sales and inventory needs.

Future Plans: With the demand for lithium and lithium compounds increasing, future plans include improvements to the pond system and wells during 2012 and the full-time operation of the lithium carbonate plant.

A salt removal project is proposed for 2012, which will involve the removal of over 1.4 million cubic yards of salt from the saturated brine complex. A U.S. Department of Energy (DOE)-funded project will continue into 2012, with well rehabilitation and replacement drilling, geothermal exploration, and further process facility improvements.

Fluid Management: In the solar pond system, the brines flow from one pond to another, typically through flow points cut in the dikes separating one pond from another, or pumped where elevation differential requires, as evaporation increases the total dissolved solids (TDS) content. Management of the flow through the system consists of regular monitoring of pond levels and laboratory analysis of the contained brines.

The rate of brine transfer from one pond to another is dictated by the rate of solids increase, which is dependent upon the evaporation rate; which is seasonally variable. Sampling of the pond brines for laboratory analysis is done on a regular schedule, which

provides for sampling of each pond a minimum of once per month and a maximum of once daily, dependent upon the need.

Pond levels are surveyed monthly, for calculation of contained gallons, and monitored daily by visual inspection. The storage capacity for meteoric waters is typically in excess of one foot of freeboard, which equates to more than four times the 100-year, 24-hour storm event. The flow through the system is adjusted and closely monitored during and after any severe storm event and action must be taken by plant personnel in the event the quantity of precipitation exceeds one tenth of an inch, pursuant to the emergency response plan.

The process fluids at the lithium carbonate plant site are contained in lined steel tanks, which are either open-topped (if located inside the plant), or covered (if located outside the facility). Process fluids at the lithium hydroxide plant are contained in steel and fiber reinforced plastic tanks, which are either open-topped (if located inside the plant), or covered (if located outside the facility). In addition, collection sumps have been installed to provide for the recovery of any fluids which may collect on the processing floor. These fluids are returned to the process for recovery of the contained lithium product values. The secondary containment required pursuant to NAC 445A.436 is provided for the post-regulation lithium hydroxide plant and lower tank farm (including acid tanks), but not the pre-regulation lithium carbonate plant.

Petroleum-Contaminated Soil (PCS) Management Plan. A PCS Management Plan was approved as an Engineering Design Change (EDC) on March 18, 2011, authorizing on-site disposal of PCS at a PCS disposal pad constructed on the Clayton Valley playa 4.5 miles east of the town of Silver Peak. Prior to management under the plan, hazardous waste determinations must be performed to demonstrate that the PCS is not hazardous waste. Hazardous waste must be managed and disposed in accordance with applicable regulations.

On-site disposal of PCS is also contingent on the results of periodic screening analyses, which must show that the PCS does not exceed screening levels established via risk assessment for various organic constituents. Otherwise, the PCS must be properly disposed off-site. PCS may be stored on an approved PCS temporary holding pad while screening analyses are performed. The PCS temporary holding pad includes a soil liner that meets the requirements at NAC 445A.438. The liner is protected by a minimum 6-inch thick layer of drain rock and a minimum 6-inch thick sand marker bed.

C. Site Hydrology/Hydrogeology and Background Groundwater Quality

Extensive exploration drilling has occurred to define the naturally occurring brine ore body and hydrogeology of the playa and areas surrounding the playa. The dual-tube drilling method is used to define a vertical profile of the hydrogeologic conditions of the subsurface as well as the groundwater chemistry. Freshwater does not exist near the pond system of the playa. However, upgradient of the playa margin yields groundwater that is potable. A monitoring well is located between the R-2 process pond and the

freshwater wells (located upgradient) to define the groundwater quality between the playa aquifer and the freshwater aquifer. The topographic surface at the freshwater wells is about 120 meters (390 feet) higher in elevation than the playa surface and the direction of the groundwater flow is clearly toward the playa.

The groundwater pumped from the Clayton Valley Playa produces a brine solution with very high Total Dissolved Solids (TDS) concentrations, averaging 139,000 ppm. Stormwater runoff and accumulation is directed to the closed hydrogeologic system of the Clayton Valley.

D. Procedures for Public Comment

The Notice of the Division's intent to issue a permit authorizing the facility to construct, operate and close, subject to the conditions within the permit, is being sent to the **Tonopah Times-Bonanza & Goldfield News** for publication. The Notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing within a period of 30 days following the date of public notice. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected intrastate agency, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

E. Proposed Determination

The Division has made the tentative determination to issue the permit.

F. Proposed Effluent Limitations, Schedule of Compliance, Special Conditions

See Section I of the permit.

G. Rationale for Permit Requirements

The facility is located in an area where annual evaporation is greater than annual precipitation. The groundwaters of the Clayton Valley Playa do not currently serve as a source of drinking water, produces a mineral fluid that is capable of commercial production, as evidenced by a 40 year history of lithium production from the fluid, and it would be economically or technologically impractical to render the water fit for human

consumption. In addition, the total dissolved solids in the groundwater averages 139,000 mg/L, due to the fact that Clayton Playa is the terminal discharging point for deeper water circulation through the adjacent valleys. Therefore, the playa groundwater is exempted from drinking water standards pursuant to NAC 445A.424(1).

The primary method for identification of escaping process solution from components on the playa margin and upgradient thereof, where groundwater quality meets or exceeds Profile I standards, will be placed on required routine monitoring and sampling of monitoring well(s) and inspections. Specific monitoring requirements can be found in the Water Pollution Control Permit.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S.C. 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50 CFR 10, April 15, 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with State permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife.

Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of the toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 1340 Financial Boulevard, Suite 234, Reno, Nevada 89502-7147, (775) 861-6300, for additional information.

Prepared by:
Date:
Fact Sheet Rev. 00:
(Permit Revision 00)

Rob Kuczynski, P.E.
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