

**FINDING OF NO SIGNIFICANT IMPACT
FOR
ELECTRIC DRIVE VEHICLE BATTERY AND COMPONENT MANUFACTURING
INITIATIVE PROJECT
CHEMETALL FOOTE CORPORATION
KINGS MOUNTAIN, NC
AND SILVER PEAK, NV**

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the final Environmental Assessment (EA) for *Chemetall Foote Corporation, Electric Drive Vehicle Battery and Component Manufacturing Initiative, Kings Mountain, NC and Silver Peak, NV* (DOE/EA-1715). Based on the analyses in the EA, DOE determined that there would be no significant adverse impacts associated with its proposed action of awarding a federal grant to Chemetall Foote Corporation (Chemetall), to partially fund the establishment of a new 5,000 metric tons per year lithium hydroxide plant at an existing Chemetall facility in Kings Mountain, North Carolina, and to refurbish and expand an existing lithium brine production facility and lithium carbonate production plant in Silver Peak, Nevada. DOE further determined that there could be beneficial impacts to the local economy and a reduction in greenhouse gas emissions from implementation of Chemetall's proposed project.

BACKGROUND: As part of the *American Recovery and Reinvestment Act of 2009* (Recovery Act) (Public Law 111-5, 123 Stat. 115), DOE's National Energy Technology Laboratory (NETL), on behalf of the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program, is providing up to \$2 billion in federal funding under competitively awarded agreements to facilitate the construction of U.S. manufacturing plants (including increases in production capacity at existing plants) that produce advanced batteries and electric drive components.

The federal action of providing funding for these projects, known as the Electric Drive Vehicle Battery and Component Manufacturing Initiative, requires compliance with the *National Environmental Policy Act of 1969* (NEPA) (42 U.S.C. §§ 4321 et seq.), the Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508) and DOE's NEPA implementing procedures (10 CFR Part 1021). Accordingly, DOE prepared an EA to evaluate the potential environmental consequences of providing a grant for this proposed project under the initiative.

PURPOSE AND NEED: The overall purpose and need for DOE action, pursuant to the Vehicle Technologies Program and the funding opportunity under the Recovery Act, is to accelerate the development and production of various electric drive vehicle systems, through building or increasing domestic manufacturing capacity for advanced automotive batteries, battery components, recycling facilities, and electric drive vehicle components, in addition to stimulating

the U.S. economy. This and other selected projects are needed to reduce the U.S. petroleum consumption through investment in and deployment of alternative vehicle technologies. The proposed project will also assist with the nation's economic recovery by creating manufacturing jobs in the United States in accordance with the objectives of the Recovery Act.

DESCRIPTION OF THE PROPOSED ACTION: DOE's proposed action is to provide a grant to partially fund Chemetall's proposed project: (1) the establishment and operation of a new 5,000 metric tons per year lithium hydroxide plant at an existing Chemetall facility in Kings Mountain; and (2) an upgrade to an existing lithium brine field production system, brine evaporation pond system, and a lithium carbonate plant in Silver Peak.

The Kings Mountain project would produce 5,000 metric tons per year of lithium hydroxide (LiOH) by using conventional technology for reacting lithium carbonate (Li_2CO_3) with lime and purifying, drying, and packaging the product for sale. This plant would be setup within an existing building owned by Chemetall and located within its existing industrial complex. Currently, the existing building is approximately 58 feet in height and would be extended two floors with a final building height of approximately 88 feet. A new addition of 8,200 square feet would be connected to the existing building at grade level for a packaging room.

As part of the project, a concrete-walled tank farm containing six new aboveground storage tanks (ASTs) would be erected adjacent to the proposed plant. Four ASTs would be 21 feet in height (two at 13,700 gallons and two at 18,900 gallons); the fifth would be 39 feet in height (32,600 gallons); and the sixth would be 18.5 feet in height (11,600 gallons). The evaporator feed tank and the evaporator-crystallizer boilout tank would both contain weak lithium hydroxide solution that would be stored in the 13,700-gallon ASTs. Process condensate water and the weak liquor tank liquids (weak lithium hydroxide solution) would be stored in the 18,900 gallon ASTs. The 36,200-gallon tank would store a strong lithium hydroxide solution. Potentially acidic streams would be neutralized in the 11,600-gallon tank prior to release to the sewer or prior to transport off site to an approved liquid wastes disposal facility.

The addition of the six ASTs would require the facility to update its Spill Prevention, Countermeasures and Control Plan to include the capacity and location of each AST, the potential for a release from each of the ASTs, and measures to be taken to avoid a release to the environment and to respond if a release should occur. Underground storage tanks would not be constructed for the proposed project.

There would be minor demolition activities to make way for the new construction. All new construction would occur on previously disturbed land. Lithium carbonate feed stock would be imported from Chemetall's facility in La Negra, Chile, and from its facility in Silver Peak, Nevada.

The Silver Peak project would refurbish and expand Chemetall's current lithium brine production and processing facility by reworking some existing brine production wells, installing new production wells, dredging and expanding the current evaporation pond system, and refurbishing and expanding an existing lithium carbonate plant. Rehabilitation of the existing ponds would involve dredging or plowing out deposits to increase depth and shoring up the earthen berm walls of the ponds. The proposed expansion of brine ponds would occur entirely

on the site of old ponds within Chemetall's patented mining claims. The rehabilitation and expansion of the lithium carbonate plant would involve minor renovations of the existing building. Existing equipment would be retained along with the installation of some new equipment.

This project would support anticipated growth in the Li-ion battery industry, and more specifically, the electric drive vehicle industry and hybrid-electric vehicle industry. If approved, DOE would provide \$17.8 million in financial assistance in a cost-sharing arrangement with the project proponent, Chemetall. The cost of the project is estimated at \$35.6 million. Additionally, 33 permanent jobs would be created.

ALTERNATIVES CONSIDERED: In addition to the proposed project, DOE considered the No Action Alternative as required under NEPA. Under the No Action Alternative, DOE would not provide funds for the proposed project. For the purposes of the EA, DOE assumed that the project would not proceed without its funding. This assumption establishes a baseline against which the potential environmental impacts of the proposed project are compared.

ENVIRONMENTAL CONSEQUENCES: DOE evaluated the potential environmental consequences of the proposed project and the No Action Alternative. DOE considered 17 environmental resource areas in the preparation of the EA. However, not all areas were evaluated at the same level of detail. DOE initially focused more detailed analysis on areas that would require new or revised permits, have the potential for significant adverse environmental impacts, or have the potential for controversy. The areas DOE evaluated in more detail included: air quality; solid and hazardous wastes; and human health and safety for both Kings Mountain and Silver Peak. For these areas, DOE determined there would be potentially minor environmental impacts. In response to comments on the draft EA, groundwater, transportation and traffic were re-evaluated for Silver Peak. For these resource areas, DOE determined the Silver Peak project would have the potential to impact transportation, traffic and potable water supplies.

Kings Mountain, North Carolina

During construction, the equipment used would intermittently emit quantities of five criteria air pollutants: carbon monoxide (CO), nitrous oxides (NO_x), sulfur dioxide (SO₂), particulate matter with particles of 10 micrometers or less (PM₁₀), and volatile organic compounds (VOCs). In addition to tailpipe emissions from heavy equipment, ground surface disturbances during excavation and grading activities could potentially generate fugitive dust. Fugitive dust can affect both environmental quality and public health. DOE expects the overall impacts from fugitive dust emissions would be temporary in duration and of minor intensity. Exhaust emissions from equipment used in construction, coupled with likely fugitive dust emissions, could cause minor, short-term degradation of local air quality. DOE expects the construction of the proposed facilities would have overall short-term and minor impacts to air quality.

Operational impacts would be similar to the impacts of current operations at Kings Mountain. Once operational, the quantity of hazardous and non-hazardous wastes generated at the Kings Mountain facility would increase, but the types of wastes would be similar to the waste streams currently generated there. Chemetall estimates 50 tons per year of non-hazardous waste would

be generated. The handling and storage of non-hazardous waste would be similar to current operations. Hazardous wastes generated would be common industrial wastes that would be accepted by treatment, storage, and disposal facilities. Resource Conservation and Recovery Act wastes would not be treated or disposed of onsite. The facility currently operates as a small quantity generator of hazardous wastes regulated by federal and state regulations. An increase of hazardous wastes generated could be managed with adequate accumulation areas and collection for off-site transport, storage, and disposal.

Health and safety issues in the proposed plant would be similar to those in the current operations at Kings Mountain. The proposed project would add a process to convert lithium carbonate to lithium hydroxide comparable to processes already existing at the Kings Mountain facility and addressed in the Safety Plan.

Lithium hydroxide monohydrate is caustic and can cause severe irritation and corrosive damage to the skin, eyes, and tissues of the respiratory system. Hazards include chemical burns in the solid form and both chemical and thermal burns in the solution phase. Contact with and inhalation of airborne lithium hydroxide monohydrate dust may severely irritate or damage the tissues of the eyes, nose, and respiratory system. Symptoms of such overexposure can include excessive coughing, vomiting, sneezing, and a sore throat. Inhalation of relatively large quantities of lithium hydroxide monohydrate may damage the tissues of the respiratory system, which can lead to the development of breathing difficulty, chemical pneumonia, and pulmonary edema. Severe inhalation overexposure may be fatal. In comparison, lithium carbonate is a minor irritant to mucus membranes for some individuals. Repeated exposure to the skin can also lead to drying and contact dermatitis. Prior to start-up of the facility, Chemetall would perform a Hazard Assessment that would identify the appropriate personal protective equipment (PPE) to protect employees in the work environment.

The packaging of the lithium hydroxide monohydrate product would be highly automated. Material bins and hoppers would have their own dust collection systems to mitigate fugitive dust exposure. Additionally, selection of required PPE would be based on current experience at the existing Chemetall operation in Silver Peak. In addition to the required PPE for general and specific tasks, the plant will be designed to minimize the potential contact with hazardous materials (i.e., automatic sampling of materials and on-line analysis). Additionally, a collection system for vapors from the hotter processing vessels would be installed to remove potentially irritating vapors from the building. Based on experiences at other facilities producing lithium hydroxide, potential accidents include: overfilling of vessels (addressed in this facility by degree of automation, system interlocks, and alarms); thermal and chemical burns (addressed via automated system design, operator training, required PPE and pre-startup Hazard Assessment and review); and lifting injuries, such as back strain (addressed via automated material handling systems).

Lithium carbonate and slaked lime would be supplied in super sacks. Slaked lime is also supplied via pneumatic tanker trucks. The finished product is a dry powder stored in bags. Based on experience with existing lithium hydroxide monohydrate facilities, the most likely transport hazard is the puncture of a bag or several bags in a fork truck accident. Operator training and experience would help to minimize the potential for accidents. Additionally, the planned stretch-wrapping of the bagged materials would help to contain the potentially leaking material.

Because critical functions of strategic importance to the national economy do not rely on plant operations, the Kings Mountain facility is not considered a potential target for intentional destructive acts. The plant is secured against public access and buffered by distance from residential areas.

Silver Peak, Nevada

Air quality impacts would be similar to those described for the Kings Mountain site.

The Silver Peak facility is located within Clayton Valley, Nevada (immediately north of Death Valley, California) and is underlain by a complex of interbedded alluvial sand and gravel, and playa clay and silt deposits containing fresh to highly saline water. Chemetall has 25 water appropriation permits from the Nevada Department of Conservation and Natural Resources, Division of Water Resources that collectively allow more than 21,000 acre-feet annually of groundwater consumption at a combined rate of 32 cubic feet per second. In 2008, production from brine-producing wells averaged 71,000 parts per million total dissolved solids. Water withdrawals between 1999 and 2008 ranged from 8,905 to 11,116 acre-feet annually, including approximately 373 to 643 acre-feet annually of fresh water from alluvial deposits that are recharged from the nearby mountain areas.

As part of the proposed project, Chemetall would develop additional production wells for lithium brine extraction and expand the evaporative pond system by dredging material out of the existing ponds, not by increasing their overall surface area. Additional brine water demand for the project is estimated to be 4,000 acre-feet annually over historical averages. Fresh water consumption would increase by approximately 160 acre-feet annually over historical usage. Despite the anticipated increase in water usage, both fresh water and brine usage would remain below the determined recharge rates in the basin, thereby continuing a supply of fresh water to support the needs of Silver Peak residents, as well as Chemetall's business.

Chemetall's Silver Peak operation has extracted fresh water and brines from the Clayton Valley for the past 45 years. Decades of collecting and analyzing water samples have documented a gradual decline in water levels as the rate of withdrawal, on average, has exceeded the rate of recharge; however, the monitoring has shown no appreciable degradation of fresh water quality. Chemetall would continue monitoring and testing fresh water and brine supplies as stipulated by its Water Pollution Control permit. The continual monitoring and data collection would be used to better define and modify, as required, Chemetall's expansion process. Furthermore, it would support decisions on when and which mitigations would be used if mitigation becomes necessary.

During 1998, Cyprus Foote Minerals, Inc. (predecessor to Chemetall Foote Corporation) prepared a groundwater assessment to address a concern Cyprus had regarding a request to the state authorities for additional water usage by a private party. In this assessment, Cyprus used two simple methods to estimate the life span of the local aquifers that supply both Silver Peak residents and Chemetall's plant. The two estimates were 14 and 27 years of remaining aquifer life at then observed linear decline rates. It was further postulated in the assessment that the rate of water level decline and aquifer depletion might accelerate through time. Twelve years later, with continued use of these water wells by Silver Peak and Chemetall, the static water levels have declined approximately an additional six feet in Chemetall's well number 2; three feet in

Silver Peak's well number 1; and two feet in a nearby down-gradient monitoring well. Overall, water levels have continued to decline but at a slower rate, rather than at an accelerating rate as predicted in the 1998 assessment. Available data and information indicate that Chemetall's two fresh water supply wells, the three municipal fresh water supply wells, and the nearby down-gradient monitoring well are in hydraulic communication, and that permeability of the alluvium around the wells is moderate to high. Large quantities of deeper "brine" water are not being drawn up into these wells at the present time, but deeper wells do draw water that is more saline (i.e., higher in total dissolved solids). While the impact of a 160 acre-feet per year increase in potable water consumption by Chemetall has not been determined, available information suggests that, at least in the near term, water levels would decline more rapidly than currently is occurring if the proposed project increases the consumption of fresh water. Likewise, the impact of an increase in municipal water demand caused by a substantial increase in the number of Silver Peak residents has not been determined.

In 2008, an EA was prepared by the County Commission, and submitted to the U.S. Environmental Protection Agency (EPA), to inform a federal decision on funding of the county's proposal to construct a third water supply well. The EA discusses the issues with the municipal water supply and contains the results of groundwater studies of the aquifers supplying both the municipal and Chemetall fresh water wells. The EA notes that the fresh water aquifers in the alluvial fan and the brine aquifers beneath the playa have geologic separation and that depletion of the fresh water aquifers is dependent on pumping rates that exceed natural recharge from the mountains. It further acknowledges that the Cyprus groundwater assessment, which predicted aquifer depletion in 14 to 27 years, was based on pumping rates of 300 gallons per minute from the municipal water wells and that, subsequent to partial replacement of the distribution network (with more than a 30 percent reduction in leaks) and conservation efforts by town residents, recent pumping rates have been only 225 gallons per minute. The EA includes modeling results of the local groundwater flow paths to the municipal and Chemetall wells. The groundwater modeling results strongly suggest that there is a large area of the alluvial fans not being tapped by the existing wells, and support the conclusion that additional fresh water could be found in the alluvial aquifers further to the southwest.

At this time, it is not clear whether an additional fresh water supply well or other mitigations would be required as a result of Chemetall's proposed activities at Silver Peak, but Chemetall would have the burden of meeting its needs for milling water without burdening the town of Silver Peak or the county government. Based on available geologic and topographic information, it appears that suitable water for Chemetall's milling (approximately 100 gallons per minute additional pumping) exists within alluvial fans along the southwestern margin of the Clayton Valley playa, and there are various opportunities to avoid further impairment of the municipal water supply wells. If needed, there are several actions that could be taken, either by Chemetall or the local government, to continue to meet the needs of both: (1) Chemetall could use reject water from its water treatment facility (reverse osmosis) for some of its milling water needs and thereby reduce its fresh water needs; (2) Chemetall could transport supplemental water to the milling plant from other sources; (3) the County Commission could upgrade the remaining old portions of Silver Peak's water distribution network to reduce leakage; or (4) Chemetall could install another fresh water supply well in the alluvial fan, further to the southwest of the existing wells. The nature of the alluvial fan deposits around Clayton Valley makes it very likely those additional potable water supplies could be found in other locations in this or nearby fans.

Traffic impacts from the construction and worker vehicles would be short term and easily accommodated within the existing roadway and intersection capacities; however, Esmeralda County officials indicate that County Road #196 was engineered to support neither heavy vehicles nor the existing load of traffic; and it is currently in a state of deterioration. The proposed project would increase truck traffic across County Road #196 by an average of one load per day for a total of two and a half trucks per day on average. Out-bound truck traffic primarily uses Highway 265. This traffic would increase on average by one-half truck trips per day for a total of one truck per day. The proposed project would generate a minor long-term increase in personal vehicle traffic due to the hiring of approximately 14 permanent employees. The additional vehicle trips to the site would increase the traffic on the existing roadways and intersections; and according to Esmeralda County officials, increased traffic from both construction and operations could have a moderate impact on the county roads, particularly County Road #196 due to its current condition. Chemetall currently maintains 25 percent of County Road #196 where it passes through the Chemetall operations. Taxes paid by Chemetall help fund Esmeralda County. The expansion project would result in higher tax revenues for the county. In an effort to reduce traffic by employees, Chemetall provides staff housing and a rent-free mobile home park to encourage employees to live in Silver Peak. Given Silver Peak's limited population and lack of services, many employees reside in Tonopah or Goldfield and commute to work each day.

Once operational, Chemetall's project could generate increased quantities of hazardous and non-hazardous wastes, but these waste streams would be similar to those currently generated. These wastes would be common industrial wastes. The facility has a permit to operate an on-site landfill for the non-hazardous waste. Chemetall estimates that 5 tons per year of additional non-hazardous waste would be generated, and the on-site landfill has the capacity to accept this waste. The quantity and type of any additional hazardous waste that would be generated by the proposed project would be acceptable to TSD facilities. RCRA waste would not be treated or disposed of onsite. The plant currently operates as a Conditionally Exempt Small Quantity Generator of hazardous wastes regulated by federal and state regulations. Therefore, an increase of hazardous wastes generated could be managed with adequate accumulation areas and collection for off-site TSDs.

The proposed project would expand Chemetall's processes and facilities comparable to those currently existing and that are addressed in the Emergency Response Plan. The facility's Safety Plan addresses the safe handling of on-site materials and the appropriate procedures to follow in the event of an accidental release. Lithium carbonate, a material that would be produced by the proposed project, is a slightly caustic material that can cause irritation to the skin and eyes. The Silver Peak facility's Safety Plan includes procedures for the safe management of lithium carbonate. The potential for impacts would be limited to on-site employees. Exposure would be avoided by the use of the personal protective equipment (e.g., gloves and goggles).

Both Sites

The other environmental areas DOE evaluated for potential impacts were: land use, noise, geology and soils, socioeconomic, environmental justice, visual resources, meteorology, surface water, wetlands and floodplains, vegetation and wildlife, cultural resources, utilities and energy use for both the Kings Mountain and Silver Peak sites. For the Kings Mountain site, DOE also considered groundwater, transportation and traffic. DOE determined that there would be no potential for adverse impacts for these resource areas or that the impacts would be negligible, temporary, or both. The EA gives the reasons DOE did not conduct more detailed evaluations of these areas.

No Action Alternative

Under the No-Action alternative, the project would either be delayed, as Chemetall sought other funding sources, or abandoned altogether. If abandoned, the potential environmental consequences and benefits would not occur.

PUBLIC AVAILABILITY: DOE distributed the draft EA on May 9, 2010, and advertised its release in North Carolina in the *Shelby Star* on May 9, 10, and 11, and Nevada in the *Tonopah Times* and *Goldfield News* on May 13. In addition, DOE sent copies for public review to the Kings Mountain Mauney Library, the Silver Peak Public Library, and the Goldfield Public Library. DOE established a 30-day public comment period, which began May 9 and ended June 9. DOE announced it would accept comments by mail, e-mail, and facsimile.

The draft EA was distributed to various federal, state, and local agencies with jurisdiction or special expertise. DOE conducted formal consultations by mail with the North Carolina Natural Heritage Program and the North Carolina Department of Cultural Resources, State Historic Preservation Office (SHPO), both in Raleigh, and the U.S. Fish and Wildlife Service (USWFS) in Asheville, North Carolina. DOE also conducted formal consultations by mail with the Nevada Natural Heritage Program and the Nevada SHPO, both in Carson City, and the USFWS in Reno, Nevada. Additionally, DOE coordinated with the Bureau of Land Management in Tonopah, Nevada. In each case, DOE received correspondence supporting a determination of no potential impacts to threatened or endangered species and critical habitat, and no potential impacts to properties listed on or eligible for inclusion in the *National Register of Historic Places*. DOE received correspondence from the Bureau of Land Management supporting a finding of no significant adverse impacts to the public lands it manages.

Copies of the final EA and this FONSI will be sent to stakeholders that provided comments or consultation and will be available at DOE's NETL web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

COMMENTS: Comments were received from 16 entities on the draft EA. Through the North Carolina Department of Administration, seven state government entities commented on the Kings Mountain site. For the Silver Peak site, there were nine commenters, of which four were state entities that commented through the State of Nevada Department of Administration. Additional comments were received from the Esmeralda County Commission, the U.S. Bureau of Land Management, State of Nevada Department of Conservation and Natural Resources

(Division of Environmental Protection -- Bureau of Air Pollution), Andres Yaksic, and Paul Rupp.

The following summarizes comments received for the Kings Mountain site. The North Carolina Department of Natural Resources (NCDNR) commented on air pollution abatement facilities and emission sources per the 15 A NCAC (2Q.O100 thru 2Q.030) application process and submission requirements. NCDNR further stated that the Sediment Pollution Control Act of 1973 must be properly addressed regarding any land disturbance and that an erosion, and sediment control plan is required if more than one acre would be disturbed. The NCDNR's Division of Air Quality stated that a modification to Chemetall's Title V Air Permit would be needed. The Division of Water Quality commented that the existing National Pollution Discharge Elimination System wastewater permit may be affected and that a construction storm water permit would be required if more than 1 acre is disturbed. The Division of Land Resources commented that an erosion and sediment control plan would be required if new land disturbance occurred or if Chemetall did not already have a permit. Additionally, the North Carolina Department of Transportation noted that the Kings Mountain Thoroughfare Plan recommends widening of I-85 to six lanes in the project vicinity and that there are plans for greenways and multi-use trails.

The following summarizes the comments received on the Silver Peak project. The Esmeralda County Commissioners wanted further definition of lithium waste streams and recognition of existing geothermal leases. The County questioned the total heavy truck traffic from the proposed project. Also, due to Chemetall's increased truck traffic, the County requested financial assistance from Chemetall for maintenance of County Road #196. The County noted that new hires for Chemetall would result in an increase in commuter traffic on sub-standard roads, and that the export of employee income would result in much less economic benefit to the County from Chemetall's expansion. The County would welcome small population increases and requested that Chemetall's use its available land and employee housing for the benefits it would bring to the county tax base and to commuter traffic reductions. The County requested information on anticipated groundwater use, additional clarification of the permit NEV0070005 regarding the interrelationship between brine and fresh water in the basin, and additional information on the potential impacts to groundwater, especially to potable water supplies. The County referred to the "Groundwater Supply Assessment of the Fresh Water Aquifer - Clayton Valley, Nevada Esmeralda County" and requested that the conclusions in this report be addressed. They requested a monitoring and mitigation program that informs the public and provides for an alternative drinking water source, if needed, for the community. Information or clarification was requested regarding the handling of lithium metal, public emergency notification procedures, and other safety concerns.

The Nevada Department of Wildlife requested additional efforts to prevent bird deaths, such as a bird monitoring and rescue program, and avoidance of ground disturbance activities during the bird breeding and nesting seasons. BLM noted several corrections, clarifications, and omissions. The Nevada State Land Use Planning Agency requested the use of lighting mitigation measures that follow "Dark Sky" lighting practices and a lighting plan for efficient lighting. The agency also requested use of building materials, colors and site placement that are compatible with the natural environment. The Nevada Division of Water Resources commented on active water rights and the need for prior approval for any changes to wells or points of diverting water. The

agency noted a property owner's responsibility for wells and boreholes, artesian flow, water use for construction, and the requirement for plugging and abandonment of unused wells and boreholes. The Nevada EPA and Bureau of Air Pollution Control commented on the potential need for a modification to Chemetall's existing air emissions permit. The Nevada SHPO supported the project.

Two citizens provided written comments. Andres Yaksic questioned DOE's cost share of the project. Paul Rupp commented on his residential location relative to Chemetall's Silver Peak operations and his understanding of the draft EA.

Public comments and responses to comments are included in Appendix B of the EA.

MITIGATION REQUIREMENTS: Operational activities at Chemetall's Silver Peak facilities would result in approximately a 160 acre-feet per year increase in potable water pumping over historic pumping rates. Chemetall's potable water supply wells are located in an alluvial fan near the municipal water supply wells of the town of Silver Peak. It appears that both Chemetall's wells and the municipal wells draw water from the same supply, a relatively small, local aquifer complex, where currently the combined pumping rates of Chemetall's wells and the municipal wells slightly exceed the recharge rate of this aquifer complex.

The local aquifer complex is being depleted gradually due to over pumping. Esmeralda County owns the municipal wells, and the County Commissioners have indicated their concerns about aquifer depletion, especially the increased depletion rate that could result from the proposed project. The State of Nevada has also expressed its concerns regarding the protection of migratory birds exposed to land-disturbing activities and to hyper-saline water in some of the brine evaporation ponds.

Therefore, by mutual agreement of Chemetall and DOE, Chemetall will employ the following mitigations during the period of time of Chemetall's increased fresh water consumption and brine production, compared to recent (2000 through 2010) rates, resulting from the proposed project:

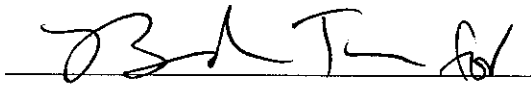
- 1) In addition to compliance with applicable regulatory and permit requirements, Chemetall shall continue to monitor **water quality** (including total dissolved solids, uranium concentrations, and fluoride concentrations) in all of Chemetall's potable water supply wells (CFC well #1, CFC well #2, and any future potable water supply wells of Chemetall) and in the down gradient monitoring well (CFC monitoring well #1) and shall report the results of the monitoring to the Esmeralda County Commission on a periodic basis, but no less than once every three months, so that the County Commission can assess the extent of brackish water up-coning or intrusion, if any, into the alluvial aquifers that supply potable water.
- 2) In addition to compliance with applicable regulatory and permit requirements, Chemetall shall continue to monitor "**static**" **water levels** in all of Chemetall's potable water supply wells (CFC well #1, CFC well #2, and any future potable water supply wells of Chemetall) and in the down gradient monitoring well (CFC monitoring well #1) and shall monitor **well production** and "**pumping**" **water levels** in all of Chemetall's

potable water supply wells (CFC well #1, CFC well #2, and any future potable water supply wells of Chemetall) and shall report the results of the monitoring to the Esmeralda County Commission on a periodic basis, but no less than once every three months, so that the County Commission can assess the extent of aquifer depletion and the risk of brine water intrusion into the alluvial aquifers that supply potable water to the town of Silver Peak.

- 3) If, as a result of the proposed project, the salinity (total dissolved solids) begins to increase significantly (i.e., threatens to reach or exceed 900 milligrams per liter) in the produced potable water of the municipal wells unaccompanied by pumping on the municipal wells in excess of permitted rates, the aggregate rate of pumping from Chemetall's existing potable water supply wells (CFC well #1, CFC well #2) should be reduced to less than 500 gallons per minute instantaneous pumping rate, 3,000,000 gallons per week, and 500 acre-feet per year; and Chemetall should either supplement its potable water supply from other sources or reduce its demand accordingly for the duration of the time period in which salinity exceeds or threatens to exceed 900 milligrams per liter in the produced potable water of the municipal wells.
- 4) During each seasonal migration of birds, Chemetall shall employ a dedicated bird watcher, whose responsibilities would include hazing, rescuing, and monitoring. Chemetall shall continue to work with the Nevada Department of Wildlife for identifying and implementing effective measures to prevent bird mortality due to the increase in lithium brine production.
- 5) To avoid impacts to species protected under the Migratory Bird Treaty Act, ground disturbing activities in areas of potential breeding habitat shall be avoided during the breeding and nesting season (March 1 through July 31). If this seasonal avoidance is not practicable, a qualified biologist shall survey the potentially affected area prior to any ground disturbing activities to determine if nesting is underway; and buffer areas shall be established as needed to protect eggs and young birds until they fledge.

DETERMINATION: On the basis of the evaluations in the final EA, and subject to the mitigations stated in this FONSI, DOE determined that no significant impact on the human environment would occur as a result of DOE's proposed action, to provide a \$17.8 million federal grant, and Chemetall's proposed project, to establish a new 5,000 metric tons per year lithium hydroxide plant at an existing Chemetall facility at Kings Mountain, and to refurbish and expand an existing lithium brine production facility and lithium carbonate plant at Silver Peak. Although the proposed project would cause air emissions, increased water usage, generate increased traffic, create additional manufacturing wastes, and would require the use and storage of additional materials, these impacts would be minor at both Kings Mountain and Silver Peak, with moderate impacts to potable water supplies at Silver Peak and to Esmeralda County roads. Chemetall would be required to adhere to applicable permit requirements and mitigations specified in this FONSI during construction and operations. All other potential environmental impacts identified in the EA would be negligible. Therefore, preparation of an Environmental Impact Statement is not required, and DOE is issuing this FONSI.

Issued in Pittsburgh, PA, this 22 day of September, 2010.



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