

## Lahontan Regional Water Quality Control Board

May 15, 2014

### INTERESTED AGENCIES AND PARTIES:

**REQUEST FOR COMMENTS – PROPOSED CLEANUP AND ABATEMENT ORDER, REQUIRING MOLYCORP MINERALS LLC., TO CLEAN UP AND ABATE THE DISCHARGE AND THREATENED DISCHARGE OF MINE WASTE TO THE GROUNDWATERS IN THE IVANPAH VALLEY AND UPPER KINGSTONE VALLEY GROUNDWATER BASINS, AND SURFACE WATERS IN THE IVANPAH HYDROLOGIC UNIT, SAN BERNARDINO COUNTY, W DID NOS. 6B362098001, 6B360008001, AND 6B360009001**

The California Regional Water Quality Control Board, Lahontan Region (Water Board) intends to issue a Cleanup and Abatement Order (CAO) on or about July 1, 2014. The Water Board is requesting your review and comments on the proposed Cleanup and Abatement Order (enclosed). All comments regarding the proposed Cleanup and Abatement Order must be received by the Water Board by **June 18, 2014, 5:00 p.m.** Please send your comments to:

Sue Genera, Executive Assistant  
Lahontan Regional Water Quality Control Board  
2501 Lake Tahoe Blvd.  
South Lake Tahoe, CA 96150

Alternatively, you may electronically submit comments (**Subject Line: Molycorp CAO Comments**) to: [Sue.Genera@waterboards.ca.gov](mailto:Sue.Genera@waterboards.ca.gov).

The proposed Cleanup and Abatement Order is being issued in response to Molycorp Minerals LLC.'s past and ongoing unauthorized discharges of mine tailings waste to ground waters from historical operations at the Mountain Pass mine site in San Bernardino County. This CAO revises an existing Water Board Order, CAO No. 6-98-19A1, issued in 1998 and amended in 2001. The proposed CAO does not address any matters concerning current operations at the Mountain Pass Mine. Discharges of wastes from current operations are governed by waste discharge requirements set forth in Board Order No. R6V-2010-0047.

The proposed Cleanup and Abatement Order requires Molycorp Minerals LLC to submit an Engineering Feasibility Study for corrective action to the Water Board by **August 30, 2014**; establishes an interim groundwater extraction performance standard; and, requires implementation of a feasibility study to assess interim remediation performance to date.

If you have questions or comments regarding this matter, please contact Christy Hunter at (760) 241-7373 or Patrice Copeland at (760) 241-7404.



LAURI KEMPER, P.E.  
ASSISTANT EXECUTIVE OFFICER

Enclosure: Cleanup and Abatement Order No. R6V-2014-(PROPOSED)

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION**

**CLEANUP AND ABATEMENT ORDER NO. R6V-2014-PROPOSED  
WDID NO. 6B362098001**

**REQUIRING MOLYCORP MINERALS, LLC, AND CHEVRON MINING, INCORPORATED,  
TO CLEAN UP AND ABATE THE EFFECTS OF WASTE DISCHARGES  
TO WATERS OF THE STATE LOCATED IN THE  
IVANPAH AND AMARGOSA HYDROLOGIC UNITS,  
MOUNTAIN PASS MINE AND MILL SITE**

San Bernardino County

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**A. FINDINGS**

The California Regional Water Quality Control Board, Lahontan Region (Water Board), finds:

1. Molycorp Minerals, LLC, a wholly-owned subsidiary of Molycorp Incorporated (Molycorp Inc.), owns and operates an open pit mine, mill, and ore processing facilities (Mine) for the economic extraction of lanthanide elements in Mountain Pass. The Mine is located within an area (2,223 acres) of land that is in sections 11, 12, 13, 14, and 15, Township 16 North (T16N), Range 13 East (R13E), and sections 30 and 31, T16N, R14E, San Bernardino Baseline and Meridian, in San Bernardino County, California, hereafter referred as the "Site." The mailing address is: HC1, Box 224, Mountain Pass, CA 92366.
2. For the purposes of this Cleanup and Abatement Order (Order), Molycorp Minerals, LLC, and Chevron Mining, Incorporated (Chevron Mining), are hereafter referred to as the "Dischargers," as discussed below.
  - a. In 2005, Chevron Mining, an indirect subsidiary of Chevron Corporation, acquired Unocal Corporation (at the time, the indirect parent company of Molycorp Inc.). On August 31, 2007, Molycorp Inc. was merged into Chevron Mining.
  - b. From September 2007 to September 2008, Chevron Mining owned the Mine and Mill Site and operated the Mine from September 2007 to September 2008, when Molycorp Minerals, LLC purchased the Mine and Site.
3. This Order is issued to the Dischargers based on provisions of California Water Code, sections 13304 and 13267, which authorize the Executive Officer of the Water Board to issue a Cleanup and Abatement Order where a discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the state and United States and to require said discharger to submit technical and monitoring reports.

4. Groundwaters in the Ivanpah Valley and Upper Kingston Valley Groundwater Basins and surface waters (including ephemeral springs) in the Ivanpah Hydrologic Unit that are tributary to Wheaton Wash have been polluted by waste discharges from unlined tailings ponds and unlined product storage ponds used in lanthanide mining dating back to the 1950s.
5. This Order requires the Dischargers to clean up and abate groundwater contaminated by mining operations; to submit technical and monitoring reports; and to maintain adequate financial assurances.

### Sources

6. Site investigations show that groundwater beneath the Site and adjacent areas is polluted with TDS, nitrate (as nitrogen), barium, strontium, radium, and uranium. Additionally, mercury and sodium lignin sulfonate are observed in groundwater at levels above background water quality conditions. Radium is also detected in some wells east of the Site, beneath Wheaton Wash, at concentrations that are above state maximum contaminant levels (MCLs) (2001, Site Investigation Report).

The discharges have contaminated groundwater and comingled with groundwater contaminated by waste discharges from other locations at the Site, causing conditions of pollution in some areas. Contaminated and polluted groundwater are located beneath the Site (on site) as well as outside of the Site boundaries (off-site [Attachment]). Off site, groundwater contamination is located primarily beneath federal lands under management of the U.S. Bureau of Land Management (BLM) and potentially beneath National Park Service (NPS) lands.

7. The ongoing (residual) and past waste discharges to groundwater from: (a) closed North Tailings Pond P-16, (b) the drainages that were used for product and waste storage, and (c) closed West Tailings Pond P-1, violate waste discharge requirements (WDRs) in Board Order Nos. 6-00-74 and R6V-2004-0042 for this Site and the *Water Quality Control Plan for the Lahontan Region* (Basin Plan).<sup>1</sup>
8. Interim Corrective Actions
  - a. Pond P-16
    - i. Currently, discharges from Pond P-16 occur due to the settlement and drainage of free water from the historical tailings solids. To augment the tailings seepage collection system (initiated in 1994), an enhanced system of

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<sup>1</sup> The Basin Plan is available at:

[http://www.waterboards.ca.gov/lahontan/water\\_issues/programs/basin\\_plan/references.shtml](http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml)

capture was installed in 2000 (extraction wells 2000-4RW and 2000-5RW). This is referred to as the Pond P-16 Interim Remedial Measures (IRM).

- ii. The Dischargers conducted mathematical modeling to assess the effectiveness of the Pond P-16 collection system in 2002, which indicated that the extraction system was capturing greater than 90 percent of the discharges from Pond P-16. From 2005 through 2008, system effectiveness declined, falling below the 85 percent performance standard required by CAO No. 6-98-19A1. The Dischargers performed an evaluation of the extraction system and submitted a report *Recovery Well Performance Evaluation*, dated December 1, 2008. That report provided an assessment of the Pond P-16 extraction system and the work that was performed to rehabilitate several extraction wells, resulting in an increased extraction rate that met the performance standard. Based on this assessment, the extraction system appears to have the capacity for greater groundwater capture.

b. Pond P-1

Discharge of tailings to Pond P-1 ceased in 1985. From 1985 through 1996, Pond P-1 received various mining wastes from other onsite storage ponds as they were clean closed. Final closure and post-closure monitoring was implemented in 2006. Interim corrective action for the leakage from Pond P-1 to groundwater was implemented and has been operating since 2001. In 2004, groundwater monitoring confirmed a release of mercury, a previously undetected constituent of concern, into groundwater. A subsequent site investigation revealed mercury was used in ore processing in the 1980s, and mercury-containing waste streams had been discharged to Pond P-1. The mercury plume has been determined to extend west outside of mine property, but no farther than monitoring well WD-1, about 4,400 feet west of the mine property boundary. Groundwater is extracted and sent to the onsite evaporation ponds.

c. Pond P-20A

Soils contaminated with TDS, nitrate and strontium were removed as an interim remediation to abate the effects of groundwater pollution for the Pond P-20A hot spot during 2006. Groundwater monitoring has shown that this removal action was ineffective for groundwater pollution. Therefore, a groundwater extraction well was installed in 2012 as a pilot project to determine the feasibility of implementing source control at the Pond P-20A hot spot. Further evaluation of this system is expected in 2014.

9. This Order supersedes Cleanup and Abatement Order 6-98-19, issued March 25, 1998, and its amendment, Order 6-98-19A1, issued March 5, 2001, to Molycorp, Inc., for the cleanup and abatement of TDS, strontium, nitrate, barium, sodium lignin sulfonate, gross alpha, gross beta, uranium, and radium that leaked into groundwater. This Order incorporates outstanding requirements from previous cleanup and abatement orders and sets new compliance dates. The Water Board reserves any and all rights in regards to enforcing Order 6-98-19 and its amendment.
10. The technical reports required by this Order are necessary to identify the corrective actions needed to prevent additional waste discharges to groundwater. Additionally, the technical reports are required to identify continued measures necessary to clean up the waste discharges cited above and to restore the beneficial uses of the groundwaters and surface waters.

**B. BENEFICIAL USES AND WATER QUALITY OBJECTIVES**

1. The Basin Plan establishes beneficial uses of water and water quality objectives to ensure the protection of those beneficial uses. The Site is located within the Ivanpah and Amargosa Hydrologic Units (HU No. 612.00 and 609.00 respectively), and the Ivanpah Valley and Upper Kingston Valley Groundwater Basins (DWR No. 6-30 and 6-22, respectively).
2. The Basin Plan identifies the present and potential beneficial uses of groundwater underlying the Site, and downgradient of the Site, to include domestic and municipal water supply (MUN), agricultural water supply (AGR), industrial water supply (IND), and freshwater replenishment (FRSH).
3. The present and potential beneficial uses of surface waters of the Ivanpah and Amargosa Hydrologic Units are set forth and defined in the Basin Plan under Minor Surface Waters and Minor Wetlands and include the following: municipal water supply (MUN); agricultural water supply (AGR); groundwater recharge (GWR); freshwater replenishment (FRSH); water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); water quality enhancement (WQE); and flood peak attenuation/flood water storage (FLD).

**THEREFORE, IT IS HEREBY ORDERED** that, pursuant to California Water Code, sections 13267 and 13304, the Dischargers shall **clean up and abate** the discharges and threatened discharges in violation of waste discharge requirements in Board Orders 6-00-74 and R6V-2004-0042 and the Basin Plan, and shall comply with the provisions of this Order in accordance with the following schedule:

1. **Interim Remediation Performance Measures.** The Dischargers shall capture at least 85 percent of the leakage from Pond P-16 during interim remediation. If the existing interim groundwater extraction system cannot meet the 85 percent standard as evaluated annually in the Interim Remediation Report submitted to the Water Board every March 30<sup>th</sup>, the Dischargers must include a proposal describing additional interim corrective action/s that will or have been implemented to meet the standard. The Interim Remediation Report shall include a schedule for constructing and operating any additional facilities to meet the standard.
2. **Quarterly Monitoring and Response Program.** The Dischargers shall continue to implement the groundwater monitoring and response program (described in the revised Monitoring and Reporting Program dated May 13, 2009) to adequately monitor groundwater contamination and the effectiveness of interim corrective actions. The Dischargers shall submit quarterly reports on April 30, July 30, October 30, and January 30 of every year describing the effectiveness of their response program. The Dischargers shall submit annual reports on March 30 of every year summarizing the previous three year's monitoring results. The quarterly reports shall include the following information:
  - a. Monthly flow monitoring data for each groundwater extraction well and infiltration trench system that are part of the Pond P-16 Corrective Action System;
  - b. Quarterly groundwater elevation measurements for each monitoring point listed in the monitoring plan;
  - c. Graphs of groundwater elevations versus time for each monitoring point listed in the monitoring plan;
  - d. Maps showing locations of monitoring wells, contaminant iso-contour lines, groundwater flow direction and groundwater gradient.
  - e. Sampling analyses results for each well included in the monitoring plan for constituents of concern; and,
  - f. Time series graphs of constituents of concern.
3. **Feasibility Study Report.** By **August 30, 2014**, the Dischargers shall submit a Feasibility Study Report that assesses remediation strategies implemented at or proposed for groundwater and surface contamination both onsite and offsite. The Feasibility Study Report shall include the following:
  - a. Updated 2002 groundwater modeling results.

- b. For those remediation strategies that have been implemented throughout the Site, describe the effectiveness of each remediation strategy compared to expected or modeled effectiveness.
  - c. Estimated cleanup times and costs for each remediation strategy to achieve background concentrations.
  - d. Preferred remediation strategy for the onsite and offsite areas to achieve background levels of water quality.
4. **Financial Assurance Report.** By August 30, 2014, the Dischargers shall submit a Financial Assurance Report that includes up-to-date cost estimates for corrective actions associated with all known and reasonably foreseeable releases as described in California Code of Regulations, title 27, section 20380. The report shall describe any assumptions made in determining the cost estimates, and whether the current financial mechanisms are adequate to cover these costs. The report shall be prepared by or under the supervision of either a California registered professional engineer or professional geologist.
5. **Signatory Requirements.** All reports required under this Order shall be signed and certified by the Dischargers, or a duly authorized representative of the Dischargers, and submitted to Water Board staff. A person is a duly authorized representative only if: (a) the authorization is made in writing by the Dischargers, and (b) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
6. **Certification.** Include the following signed certification with all reports submitted pursuant to this Order:

*I certify under penalty of perjury under the laws of the State of California that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

7. **Report Submittals.** All technical reports required under this Order shall be submitted to:

California Regional Water Quality Control Board – Lahontan Region  
14440 Civic Drive, Suite 200  
Victorville, CA 92392

8. **Cost Recovery.** Pursuant to Water Code, section 13304, the Water Board is entitled to, and may seek, reimbursement for all reasonable costs actually incurred by the Water Board to investigate unauthorized discharges of wastes and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial actions required by this Order.
9. **California Environmental Quality Act (CEQA) Compliance.** Issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act (CEQA, [Public Resources Code, section 21000 et seq.]), pursuant to California Code of Regulations, Chapter 3, title 14, section 15321, subdivision (a) (2). If implementation of any work plan subject to this Order may result in significant adverse physical impacts to the environment that may need to be evaluated under CEQA, the appropriate lead agency will address CEQA requirements prior to the Discharger implementing the work plan.
10. **Requesting Administrative Review by the State Water Resources Control Board (State Water Board).** Any person aggrieved by an action of the Regional Water Board that is subject to review as set forth in the Water Code, section 13320, subdivision (a), may petition the State Water Board to review the action. Any petition must be made in accordance with the Water Code, section 13320, and the California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within 30 days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet at [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality/index.shtml](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml) or will be provided upon request.
11. **Enforcement.** Failure to comply with the terms or conditions of this Order may result in additional enforcement action, which may include pursuing administrative civil liability pursuant to Water Code, sections 13268, 13350, and/or 13385, or referral to the Attorney General of the State of California. The Water Board reserves its right to take any enforcement action authorized by law.
12. **No Limitation of Water Board Authority.** This Order in no way limits the authority of this Water Board to institute additional enforcement actions or to require additional investigation and cleanup of the site consistent with the Water Code. This Order may be revised as additional information becomes available.

Molycorp Minerals and  
Chevron Mining Inc.  
San Bernardino County

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CLEANUP AND ABATEMENT ORDER  
NO. R6V-2014-PROPOSED  
WDID NO. 6B362098001

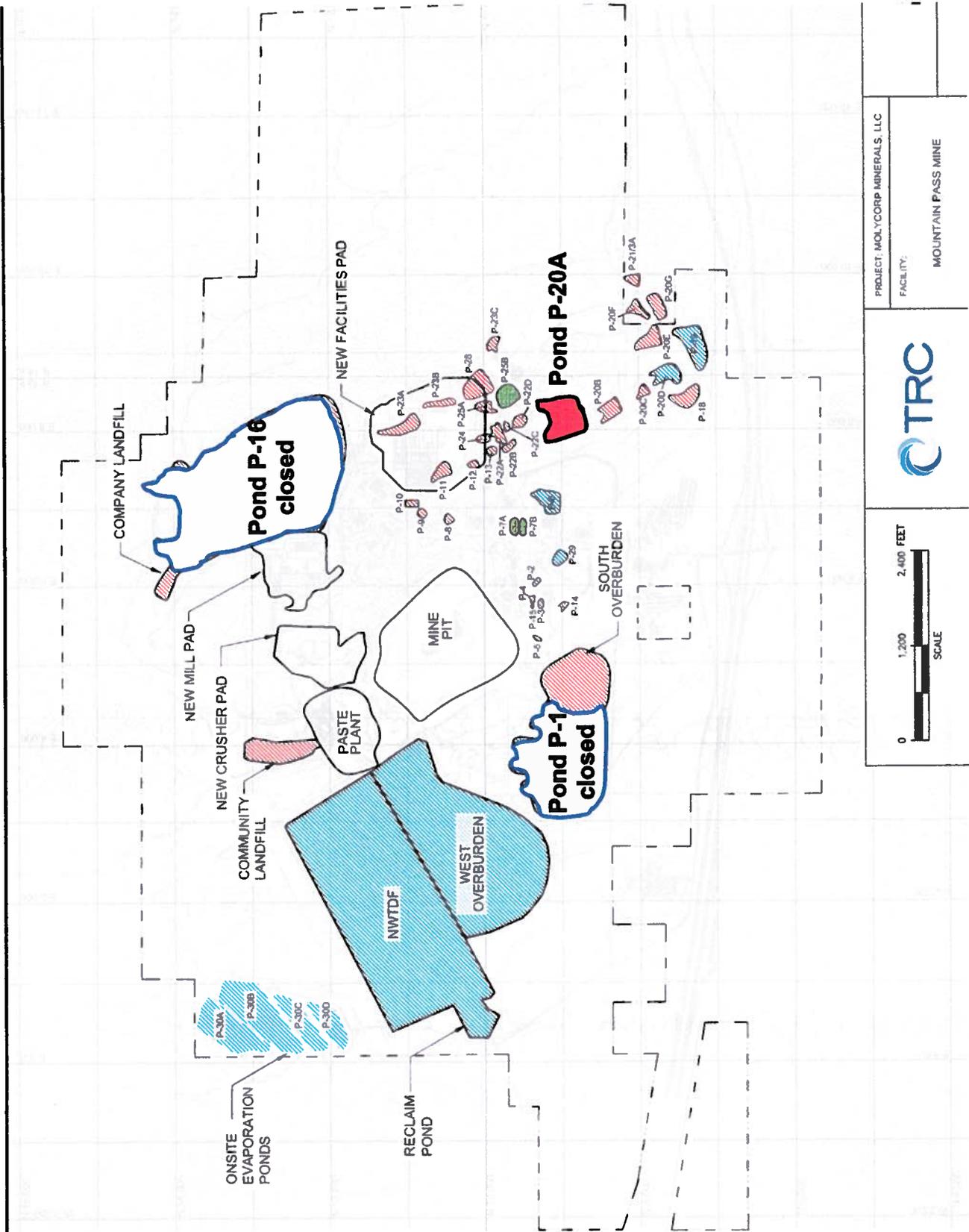
Ordered by: \_\_\_\_\_  
PATTY Z. KOUYOUMDJIAN  
EXECUTIVE OFFICER

Dated: June XX, 2014

Attachment: Mountain Pass Mine Site – Waste Units

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PROPOSED



PROJECT: MOLYCORP MINERALS, LLC  
FACILITY: MOUNTAIN PASS MINE

