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June 5, 2024

VIA EMAIL

(waterqualitypetitions@waterboards.ca.gov)

State Water Resources Control Board
Office of Chief Counsel
Adrianna M. Crowl
Sacramento, CA 95812-0100

Re: Petition for Review of Investigative Order No. R4-2024-0005 by Los Angeles Regional Water Quality Control Board for Provision of Technical Reports and Workplans for Subsurface Investigation

Dear State Water Resources Control Board:

Pursuant to California Water Code section 13320 and Title 23, California Code of Regulations (CCR) sections 2050-2068, Petitioner, American Pacific Corporation and its affiliate, Western Electrochemical Company, a Delaware Corporation (“WECCO DE”) ¹, petition the State Water Resources Control Board (“State Water Board”) for review of Investigative Order No. R4-2024-0005 to Provide Technical Reports and Workplans For Subsurface Investigation (the “Investigative Order”) directed to “*Western Electrochemical Company*” and issued by the Los Angeles Regional Water Quality Control Board (“Regional Water Board”) on May 6, 2024. See Exhibit A, Investigative Order dated May 6, 2024.

The Investigative Order has apparently inadvertently identified the wrong “*Western Electrochemical Company*”, as American Pacific Corporation’s affiliate, WECCO DE, which was first established in February 1989 as a Delaware entity, did not exist prior to that time and never operated in California. It is our understanding that the “*Western Electrochemical Company*” facility discussed in the Investigative Order is an affiliate of Kerr-McGee Corporation, formerly an unaffiliated **competitor** of American Pacific Corporation. For the avoidance of doubt, American Pacific Corporation and its affiliate WECCO DE have no corporate affiliation with Kerr-

¹ WECCO DE became a wholly owned division of American Pacific Corporation by 1998 and is no longer a going concern.

Greenberg Traurig, LLP | Attorneys at Law

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June 5, 2024

Page 2

McGee nor the Western Electrochemical Company identified in the Investigative Order that operated a Potassium Perchlorate Plant in California in the 1940's.

I. Petitioner

The name and address of the Petitioner is:

American Pacific Corporation
10622 West 6400 North
Cedar City, Utah 84721
Attention: Jeff Gibson, Vice President

II. Action of the Regional Water Board to Be Reviewed

Petitioner is petitioning for review of Investigative Order No. R4-2024-0005 dated May 6, 2024, specifically that (i) Petitioner's affiliate, WECCO DE, is included as a suspected discharger with respect to 2650 Washington Boulevard in Los Angeles, California (the "Site") and (ii) the requirement that WECCO DE submit environmental assessments and/or technical reports for the Site.

Petitioner further requests that the State Water Board review the decision to issue the Investigative Order to WECCO DE given that WECCO DE has not owned, operated, or controlled the Site at any point, and in fact did not come into existence until decades after the events discussed in the Investigative Order.

III. Date of the Regional Water Board Action

The Regional Water Board signed the Investigative Order on May 6, 2024. This Petition is timely pursuant to Water Code Section 13320.

IV. Statement of Reasons Why the Regional Water Board's Action was Inappropriate and Improper

WECCO DE is incorrectly identified as a suspected discharger as the successor to the former owner and/or operator of the Potassium Perchlorate Plant located at the Site. It is our understanding that, based on our knowledge of the industry in which American Pacific Corporation operates, the entity discussed in the Investigative Order is or was an affiliate of Kerr-McGee Corporation (formerly an unaffiliated **competitor** of American Pacific Corporation). American Pacific Corporation and its affiliate WECCO DE have no corporate affiliation with the Western Electrochemical Company that operated in California in the 1940's or otherwise. By way of background, American Pacific Corporation's affiliate, WECCO DE, was first established in February 1989 as a Delaware entity. See Exhibit B, DE Incorporation Date.

Petitioner believes that the correct entity subject to the Investigative Order is Kerr-McGee Corporation's affiliate, Western Electrochemical Company, which was "founded in 1941 as a Nevada Corporation for the purpose of manufacturing chlorates and perchlorates. . . operations were confined to Los Angeles in the years 1941-1945. In 1945 WECCO [not WECCO DE] converted facilities recently released by the war-born Basic Magnesium, Inc., at Henderson,

Nevada, and began operations there. In 1946 the Los Angeles plant was shut down and all operations moved to Nevada[.]” See Exhibit C, WECCO Brochure.

V. How the Petitioner is Aggrieved

Petitioner is aggrieved by the Regional Water Board’s action because it is and will be subjected to significant time and costs to comply with and/or appeal the Investigative Order directed to the incorrect entity. According to the Investigative Order, the “technical reports required by this Order may cost in the range of \$60,000 to \$300,000 depending upon the number and depths of sampling locations and depending on whether sources are identified and the extent of the delineation.” Petitioner would also be subject to daily fines for each day the requirements of the Investigative Order are not met.

Petitioner is not in the position to respond to the requirements set forth in the Investigative Order because it simply has never had any affiliation or involvement with or knowledge of the property or Western Electrochemical Company in question. WECCO DE seems to have been named in the Investigative Order due to a clerical error.

VI. State Water Board Action Requested by Petitioner

Petitioner requests that at the earliest possible date, the State Water Board find that the Regional Water Board’s naming of WECCO DE as a suspected discharger was improper and requests that the State Water Board to either require the Regional Water Board to 1) rescind the Investigative Order or 2) to revise the Investigative Order to make clear that a **different** Western Electrochemical Company should be responsible for responding to the Investigative order relating to the events and issues set forth therein.

VII. Statement of Points and Authorities in Support of Legal Issues Raised in Petition

Pursuant to Water Code section 13320 and California Code of Regulations, title 23, sections 2050 *et. seq.*, any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action.

VIII. Statement Regarding Service of the Petition on the Regional Water Board

A copy of this Petition was sent to the Regional Water Board to the attention of Marcos Ferreccio (Marcos.Ferreccio@waterboards.ca.gov).

IX. Statement Regarding Issues Presented to the Regional Water Board

To the extent that it had the opportunity to do so, Petitioner raised the substantive issues and objections contained herein before the Regional Water Board. Specifically, Petitioner, through its legal counsel, corresponded with Marcos Ferreccio on May 13, 2024 wherein Petitioner stated that the Regional Water Board has inadvertently identified the wrong Western Electrochemical Company in the Investigative Order. Supporting documents were uploaded to GeoTracker on May 15, 2024. Petitioner, through its legal counsel, followed up with Mr. Ferreccio via telephone and voice message, and sent follow up email messages on May 29 and May 31, 2024.

June 5, 2024

Page 4

Petitioner has not substantively heard back from the Regional Water Board regarding the submitted materials and the fact that the Regional Water Board has identified the wrong entity in the Investigation Order. Petitioner is filing this Petition out of an abundance of caution to preserve its rights as a third-party moving forward.

For all of the foregoing reasons, Petitioner respectfully requests that the State Water Board review the finding in the Regional Water Board's Investigative Order that WECCO DE is a suspected discharger to the Site and grant the relief as set forth above.

Best Regards

A handwritten signature in blue ink, appearing to read "Michael P. Canavan", written in a cursive style.

Michael P Canavan
Of Counsel

MC:mlg

Exhibit A

Los Angeles Regional Water Quality Control Board

INVESTIGATIVE ORDER NO. R4-2024-0005

**CALIFORNIA WATER CODE SECTION 13267 ORDER
ORDER TO PROVIDE TECHNICAL REPORTS AND WORKPLANS FOR
SUBSURFACE INVESTIGATION**

**DIRECTED TO
WESTERN ELECTROCHEMICAL COMPANY**

**FORMER POTASSIUM PERCHLORATE PLANT
2650 EAST WASHINGTON BOULEVARD, VERNON, CA 90023
(SCP NO. 1618)**

**ON
May 6, 2024**

The California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) makes the following findings and issues this Order pursuant to California Water Code (CWC) Section 13267 requiring Western Electrochemical Company to further investigate and assess the site located at 2650 Washington Boulevard, Los Angeles, Ca 90023 (Site).

1. The Site is located in an industrial area. Currently, Los Angeles Sanitation and Environment is operating a Household Hazardous Waste Collection Center, namely the Washington Boulevard S.A.F.E (Solvents, Automotive, Flammables, Electronics) Center, at the Site.
2. Historical activities from a former Potassium Perchlorate Plant at the Site included production of perchlorates for use in solid rocket propellants. The former Potassium Perchlorate Plant had discharged perchlorate into subsurface soil and groundwater. Recent analytical data collected by the Water Replenishment District (WRD) on the Los Angeles Forebay Perchlorate Plume indicates that a perchlorate concentration in groundwater close to the Site is 3,000 micrograms per liter.
3. The Los Angeles Water Board has reason to suspect that there is a discharge of waste that could affect the quality of the waters of the State based on environmental sampling data, including groundwater monitoring data collected by WRD, see Attachment 1 (Perchlorate Concentration Map - Q3 2021 Upper San Pedro A Aquifer

NORMA CAMACHO, CHAIR | SUSANA ARREDONDO, EXECUTIVE OFFICER

System) and Attachment 2 (Perchlorate Concentrations in Groundwater - Q3 2021). The maximum perchlorate detection in the Upper San Pedro A Aquifer System was 5,200 micrograms per liter during the Third Quarter 2021 sampling event.

4. The Los Angeles Water Board has additional evidence from an American Institute of Aeronautics & Astronautics paper and the Los Angeles Times indicating that the former Potassium Perchlorate Plant produced potassium perchlorate at the rate of approximately 100 tons per month beginning in January 1944 and increasing production to 200 tons per month later in 1944 (Attachments 3 and 4). After August 1945, the former Potassium Perchlorate Plant continued to operate and produced sodium chlorate and potassium chlorate. Total of 4,200,000 pounds of potassium perchlorate was produced at the Plant during this time (Attachment 5). The former Potassium Perchlorate Plant was sold to Hydrocarbon Chemicals, Inc. in August 1947, and its primary function was the reduction of iron, zinc and copper to power form (Attachment 4).

In 1998, Alameda Corridor Transportation Authority (ACTA) acquired the northern portion of the Site (approximately 6,450 square feet) as a permanent exclusive easement for the elevated portion of the Redondo Junction Grade Separation (RJGS, railway), which was part of the Alameda Corridor construction. One support column was constructed within ACTA's easement. In 1997, Phase I Site assessment and Phase II subsurface investigations were conducted. On August 23, 2002, the Los Angeles Water Board issued a No Further Action letter for total petroleum hydrocarbons, volatile organic compounds, and heavy metals to ACTA at Alameda Corridor North-End, City of Los Angeles Department of Water and Power property at 2650 East Washington Boulevard in Los Angeles. Perchlorate was not analyzed at the time of the No Further Action determination.

5. This Order identifies Western Electrochemical Company as a suspected discharger because it is the successor entity of the Potassium Perchlorate Plant operator, also named Western Electrochemical Company, which conducted the activity at the Site that resulted in the discharge of waste or suspected discharge of waste that could affect the quality of waters of the State. CT Corporation System is identified as the Registered Agent for Western Electrochemical Company on Secretary State of Utah Business Search.
6. California Water Code (CWC) Section 13267, subdivision (b)(1) states, in part:

"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who

has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

7. This Order requires the entity named herein to: a) submit any environmental assessment and technical reports for the Site that have been produced to date; b) prepare and submit a technical work plan to investigate and assess the soil and groundwater conditions beneath the Site; and c) complete and submit Chemical Storage and Use Questionnaire (Attachment 6). You are expected to submit complete technical reports as required by this Order. The Los Angeles Water Board may reject the reports if they are deemed incomplete and/or require revisions to the report under this Order.
8. The burdens, including costs, of these reports bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The information is necessary to protect groundwater quality, which may be impacted from wastes discharged to soil and groundwater as a result of the activities performed at the Site, adequately determine the extent of discharges of waste at and from the Site, to assure adequate cleanup of the Site, if necessary, and to assure that discharges of waste that could impact water quality will be addressed. These activities all protect human health and the environment. The technical reports required by this Order may cost in the range of \$60,000 to \$300,000 depending upon the number and depths of sampling locations and depending on whether sources are identified and the extent of the delineation.
9. The issuance of this Order is an enforcement action by a regulatory agency and is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to California Code of Regulations, title 14, section 15321, subdivision (a)(2). This Order requires submittal of technical reports and work plans. Information collection is exempt from CEQA pursuant to California Code of Regulations, title 14, section 15306. It is unlikely that compliance with this Order, including implementation of the work plans, could result in anything more than minor physical changes to the environment. (Pub. Res. Code § 15061, subd. (b)(3) [common sense exemption].) If the implementation of this Order may result in

significant impacts on the environment, the appropriate lead agency will address the CEQA requirements prior to approval of any work plan.

10. Any person aggrieved by this action of the Los Angeles Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Note that filing a petition does not stay the requirements of this Order. 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 or will be provided upon request.

THEREFORE, IT IS HEREBY ORDERED that Western Electrochemical Company pursuant to Water Code section 13267, subdivision (b), is required to submit the following **by August 9, 2024**:

1. Any environmental assessment reports for the Site that have been produced to date, including but not limited to:
 - a. Environmental Phase I and Phase II reports;
 - b. A description of current and historical business and facility operations at the Site. Any documentation of previous soil, soil vapor, wastewater, and/or groundwater investigation/cleanup conducted at the Site. Also, any historical spill and mitigation records must be included that are not included in the reports referenced above;
 - c. Locations of any current and former clarifiers, sumps, chemical storage areas, tanks, or any waste treatment/discharge areas. Those locations and building(s) must be presented on a scaled facility map.
2. A subsurface investigation work plan (Work Plan) for soil and groundwater to characterize chemicals of concern (COCs) including perchlorate originating from the Site. The Work Plan shall propose and include the following at a minimum:
 - a. Collection of soil samples that will fully delineate the lateral and vertical extent of COCs in soil.
 - b. Collection of groundwater samples by installing groundwater monitoring wells that will fully delineate, laterally and vertically, the extent of COCs in

groundwater. The groundwater monitoring wells shall also determine the groundwater elevation, flow direction, and gradient.

- c. A site-specific health and safety plan (HSP) in compliance with California Occupational Safety and Health Agency (Cal-OSHA), Health and Safety Code, Title 8, California Code of Regulations, Section 5192 and other appropriations.
 - d. Upon approval, the Work Plan shall be implemented and a Site Investigation Report summarizing the results shall be submitted to the Los Angeles Water Board by a date to be determined at a later time by the Executive Officer.
3. Complete and submit the attached Chemical Storage and Use Questionnaire (Attachment 6) intended to gather detailed information about past and present chemicals stored and used on the Site.
 4. The above items shall be submitted electronically (see requirement no. 6. below). The case manager's contact information is:

Marcos Ferreccio

Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013
Phone: (213) 576-6680
Email: Marcos.Ferreccio@waterboards.ca.gov

5. Pursuant to Water Code section 13268, subdivision (a), any person who fails to submit reports in accordance with the Order is guilty of a misdemeanor. Pursuant to Water Code section 13268, subdivision (b)(1), failure to submit the required technical report described above by the specified due date(s) may result in the imposition of administrative civil liability by the Los Angeles Water Board in an amount up to one thousand dollars (\$1,000) per day for each day the technical report is not received after the above due date. These civil liabilities may be assessed by the Los Angeles Water Board for failure to comply, beginning with the date that the violations first occurred, and without further warning.
6. The State Water Resources Control Board adopted regulations (California Code of Regulations, title 23, sections 3891 et seq.) requiring the electronic submittals of information (ESI) for all site cleanup programs, starting January 1, 2005. Currently, all of the information on electronic submittals and GeoTracker contacts can be found on the Internet at the following link:
http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml.

To comply with the above referenced regulation, you are required to upload all technical reports, documents, and well data to GeoTracker by the due dates specified in the Los Angeles Water Board letters and orders issued to you or for the Site. However, the Los Angeles Water Board may request that you submit hard copies of selected documents and data in addition to electronic submittal of information to GeoTracker. For your convenience, the GeoTracker Global ID for this site is **T10000021555**.

7. The Los Angeles Water Board, under the authority given by Water Code section 13267, subdivision (b)(1), requires you to include a perjury statement in all reports as required by this Order. The perjury statement shall be signed by a senior authorized company representative (not by a consultant). The perjury statement shall be in the following format:

“I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, 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.”

SO ORDERED.

for Susana Arredondo
Executive Officer

5/6/24
Date

Attachments:

1. Perchlorate Concentration Map - Q3 2021 Upper San Pedro A Aquifer System
2. Perchlorate Concentrations in Groundwater - Q3 2021
3. History Of Establishing a Source of Potassium and Ammonium Perchlorates for Use in Solid Propellant Rockets
4. Los Angeles Times (August 13, 1947)
5. Plancor 1873 Western Electrochemical Company – Potassium Perchlorate Produced
6. Chemical Storage and Use Questionnaire

Exhibit B

Department of State: Division of Corporations

[Allowable Characters](#)

HOME

Entity Details

THIS IS NOT A STATEMENT OF GOOD STANDING

[File Number:](#) **2188879** [Incorporation Date /](#) **2/28/1989**
[Formation Date:](#) (mm/dd/yyyy)

[Entity Name:](#) **WESTERN ELECTROCHEMICAL COMPANY**

[Entity Kind:](#) **Corporation** [Entity Type:](#) **General**

[Residency:](#) **Domestic** State: **DELAWARE**

[REGISTERED AGENT INFORMATION](#)

Name: **THE CORPORATION TRUST COMPANY**

Address: **CORPORATION TRUST CENTER 1209 ORANGE ST**

City: **WILMINGTON** County: **New Castle**

State: **DE** Postal Code: **19801**

Phone: **302-658-7581**

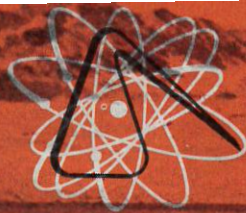
Additional Information is available for a fee. You can retrieve Status for a fee of \$10.00 or more detailed information including current franchise tax assessment, current filing history and more for a fee of \$20.00.

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Exhibit C

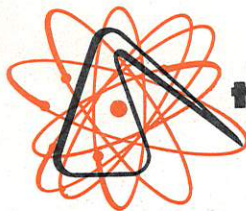
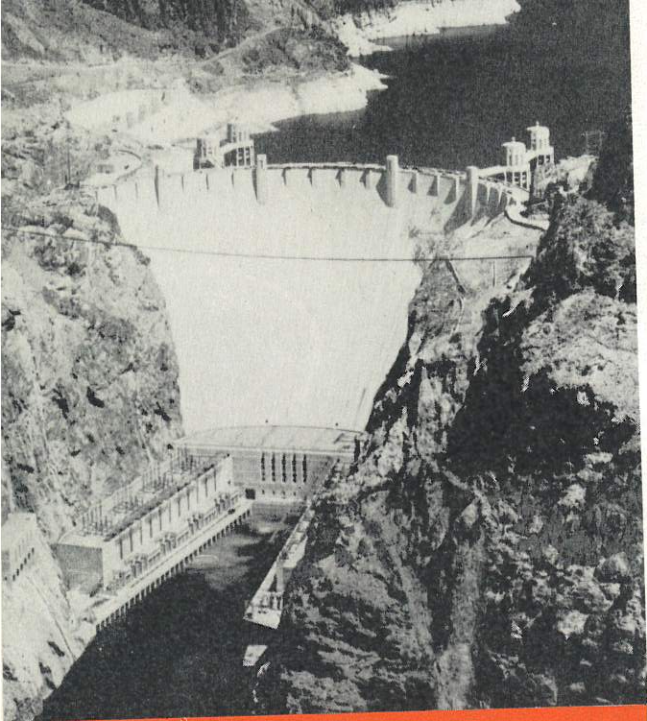


WESTERN ELECTROCHEMICAL COMPANY

W E C C C O

Henderson, Nevada

Electrochemicals of the Highest Quality



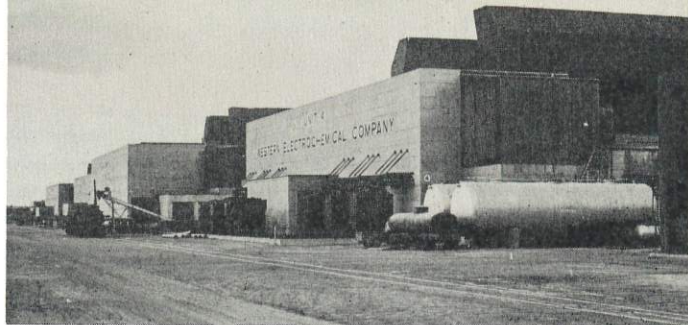
the Story

Barreling electricity is the prime function of Western Electrochemical Company. Kilowatt hours from Hoover Dam's power generators are trapped by WECCO in chemicals and metals, barreled, and shipped all over the United States and to foreign consumers. The current WECCO products are marketed competitively in all sections of the country. Cotton in California's San Joaquin Valley is more easily picked after Hoover Dam power defoliates the cotton plants, through the application of WECCO sodium chlorate. In U. S. Army Signal Corps field maneuvers, a walkie-talkie is using Hoover Dam power, through WECCO electrolytic battery-active manganese dioxide. This same source of energy lifts airplanes off short runways through the use of WECCO potassium perchlorate or ammonium perchlorate, and bleached the paper this is printed on using sodium chlorate. Through products such as those described in this booklet, uses are being found for Hoover Dam power in every area of industry.

High voltage energy is delivered directly to WECCO from Hoover Dam, only 17 miles away.

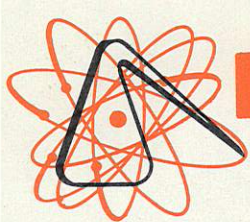
Western Electrochemical Company was founded in 1941 as a Nevada Corporation for the purpose of manufacturing chlorates and perchlorates. The stimulus of wartime production helped in the rapid growth of the company, but operations were confined to Los Angeles in the years 1941-1945. In 1945 WECCO converted facilities recently released by the war-born Basic Magnesium, Inc., at Henderson, Nevada, and began operations there. In 1946 the Los Angeles plant was shut down and all operations moved to Nevada, except for a research laboratory which is still maintained in Culver City, California. The executive and sales offices also are now at Henderson. By 1950, WECCO was ready to expand productive capacity for its basic line of products and to undertake the development and manufacture of new ones. This program has resulted in the acquisition and conversion of a large portion of the plant facilities formerly used by Basic Magnesium.

Military use of WECCO's potassium perchlorate is demonstrated by this spectacular takeoff of an Air Force B-47, assisted by 33 1,000-pound thrust Aerojet-General Corporation JATOs.



A bank of transformers feeds electrical energy into one of WECCO's several processing units.





NaClO₃ Sodium Chlorate

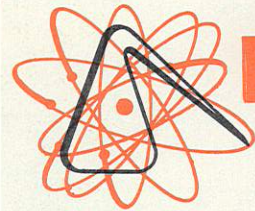
Although one of the youngest major producers, Western Electrochemical Company produces sodium chlorate in large quantity and has developed capacity to anticipate future demand.

In the agricultural field, sodium chlorate is widely used as a weed killer and a defoliant. The paper and pulp bleaching industries also provide a major market for sodium chlorate.

For these and other purposes, including metallurgical, sodium chlorate is shipped in crystal form throughout the United States both in steel drums and in bulk.

TYPICAL ANALYSIS

Sodium Chloride	.05%
Moisture	.01
Magnesium Carbonate	.20
Sodium Bromate	.02
Insoluble	Trace
Potassium	Nil
Sodium Chlorate	99.7



KClO₃ Potassium Chlorate

Western Electrochemical Company's output of potassium chlorate is currently being shipped throughout the country from Dixfield, Maine, to Chico, California. A substantial portion of WECCO's production of potassium chlorate also finds its way into the export market.

Potassium chlorate is primarily used in the manufacture of matches, as well as in fireworks and munitions. In the munitions field, WECCO is meeting the rigid Joint Army and Navy specifications for certain uses. Shipments are made in steel drums, and all but exceptionally large orders or those involving unusual specifications can be filled from stock.

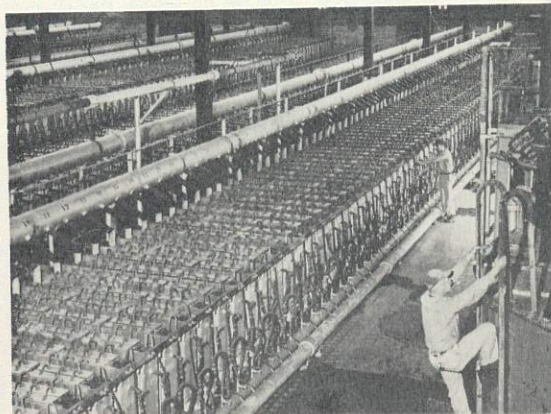
TYPICAL ANALYSIS

Chlorides	.07%
Bromates	.012
Moisture	.02
Insoluble	.01
Potassium Chlorate	99.8

the Pro

Since 1950, WECCO's record of accomplishment is a story of expansion to meet new market requirements. The production capacity of sodium chlorate has been virtually doubled. Meanwhile, in cooperation with the U. S. Army Signal Corps, WECCO developed the process for manufacturing electrolytic battery-active manganese dioxide, designed, built, and is now operating a plant with a capacity of ten tons a day.

Electrolysis in these sodium chlorate cells is a continuous process.



ducts

With U. S. Navy Department cooperation, WECCO also developed an ammonium perchlorate manufacturing process, and WECCO engineers carried it through the pilot plant stage to design, construction, and operation of a 1,200 ton per month manufacturing facility.

In the past five years, WECCO designed, built, and started operations on a two ton a day manganese metal plant.

This booklet describes six of the products of which WECCO is an outstanding producer.

A U. S. Navy A3D Sky Warrior takes off with the assistance of 12 Aerojet-General JATOs, using WECCO's ammonium perchlorate.



$KClO_4$ Potassium Perchlorate

The output by Western Electrochemical Company of potassium perchlorate is largely for use in rocket propulsion. For example, it is employed as an oxidizing agent in Jet Assist Takeoff (JATO) units. It is also employed in fuses (railroad flares), military flares, and munitions. WECCO meets the rigid Joint Army-Navy specifications for munitions use of certain grades of potassium perchlorate and works closely with many firms engaged in development work requiring this chemical.



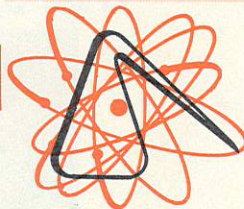
TYPICAL ANALYSIS

Odor	None
Color	Clear
Chlorates	Trace
Chlorides	.085%
Bromates	.002
Sodium	.066
Calcium & Magnesium	None
Hypochlorites	None
Insoluble	.003
Moisture	.016
Potassium Perchlorate	99.8

NH_4ClO_4 Ammonium Perchlorate

Ammonium perchlorate is now manufactured by Western Electrochemical Company for several customers. It is used as an oxidizer in rocket propulsion; e.g., its use is now widespread in the JATO. Rocket-propelled guided missiles are also made with ammonium perchlorate in their rocket boosters. This product is employed in units designated as "smokeless," because it leaves no ash.

At this time its use is primarily military. Among WECCO customers are Aerojet-General Corporation and Thiokol Chemical Corporation.



TYPICAL ANALYSIS

Water Insoluble	.003%
Ash	.05
Chlorates	.004
Chlorides	.020
Sulfates	trace
Bromates	.002
Non-Alkali Metals	.002
Moisture	.004
Reaction—Methyl Orange	Neutral
Ammonium Perchlorate	99.9



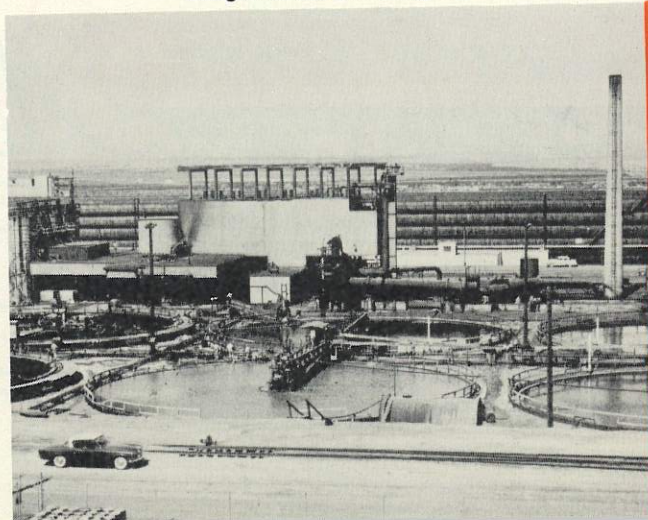
MnO₂ Electrolytic Battery-Active Manganese Dioxide

TYPICAL ANALYSIS

Available Oxygen as % MnO ₂	89.5%
Total Manganese as % Mn	59.5
Absorbed Moisture	0.95
Iron	0.07
Lead	Nil
Silicon	0.09
Total Insoluble (in HCl)	1.33
pH	5.4
Apparent Density	22.5
% - 200 mesh	92.80
% - 325 mesh	59.32

Electrolytic battery-active manganese dioxide is used as a depolarizer in dry batteries. So far its use has been primarily military, but as the economies of large-scale production become effective it is believed that the product will have extensive application in the commercial field. Developed by WECCO with the assistance of the U. S. Bureau of Mines and the U. S. Army Signal Corps, it makes use of the domestic, low-grade manganese supply on an economically feasible basis. It is now used in heavy-duty cold weather and hot weather military batteries.

Manganese ore processing area.



Efficient transportation facilities insure prompt shipment of WECCO products.

Mn Electrolytic Manganese Metal



The electrolytic manganese metal plant is a recent addition to WECCO's facilities. The high purity (99.9% manganese) of the product makes it eminently suitable for economical use in stainless steels, electrical resistance alloys, high temperature alloys, and the non-ferrous metals containing manganese. Many of the practical problems encountered by the manufacturers of these products are eliminated when electrolytic manganese metal replaces alloying agents of lower purity. It also finds application in the preparation of pure chemical salts.

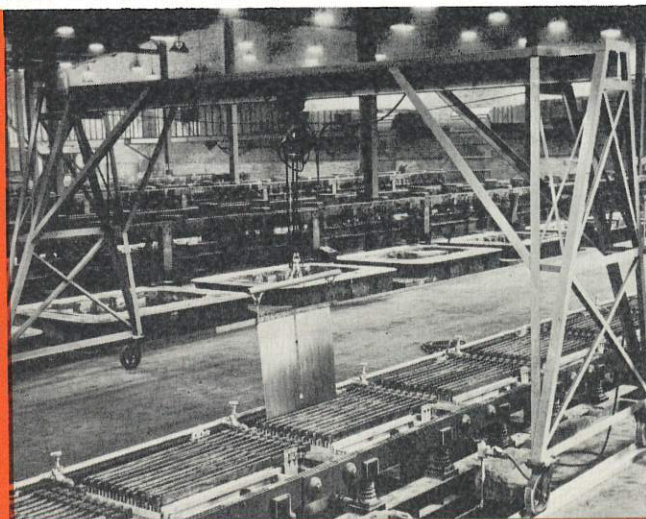
TYPICAL ANALYSIS

Sulfur	.022%
Iron	.001
Carbon	.005
Phosphorus	Trace
Silicon	<.01
Nickel	<.01
Copper	<.01
Lead	.005
Manganese	99.95

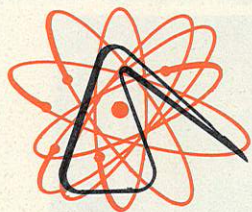
Cathode is shown being lowered into electrolytic manganese metal cell.



Mercury arc rectifiers, which are typical of the extensive electrical installation necessary for a continuous supply of energy.



W E C C O



for Electrochemicals of the Highest Quality

WESTERN ELECTROCHEMICAL COMPANY

Executive & Sales Offices

Henderson, Nevada