SANTA CLARA VALLEY WATER DISTRICT
REVISED BOARD INVESTMENT POLICY

July 1, 2020

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SANTA CLARA VALLEY WATER DISTRICT
REVISED BOARD INVESTMENT POLICY

JULY 1, 2020

1.0 POLICY

It is the policy of Santa Clara Valley Water District (Valley Water) that public funds not needed for the immediate necessities of Valley Water should, to the extent reasonably possible, be prudently invested or deposited consistent with applicable law to produce revenue for Valley Water.

The District Treasurer-Chief Financial Officer and his designee, the Treasury and Debt Officer, manages Valley Water's investment portfolio under the prudent person standard, which states that:

Investments shall be made with judgment and care, under circumstances then prevailing, which persons of prudence, discretion and intelligence exercise in the management of their own affairs, not for speculation, but for investment, considering the probable safety of their capital as well as the probable income to be derived.

2.0 SCOPE

The Investment Policy applies to Valley Water's pooled investment fund, which encompasses all monies under the direct oversight of the District Treasurer. Included in the investment pool are the Valley Water General Fund, the Safe, Clean Water Fund, the Watershed Funds, the Water Utility Enterprise Fund, the Equipment Service Fund, the Risk Insurance Fund, and debt proceeds with special consideration given to specific provisions contained in the indentures for each issuance. The employees' retirement, other postemployment benefit, and deferred compensation funds are not included nor are the Guaranteed Investment Contracts or any other debt proceeds that are invested following instructions in the debt documents.

A glossary containing key terms used in this document is included in Exhibit A.

3.0 OBJECTIVES

Valley Water will invest funds under the prudent person standard as described in Section 1, and within the specific parameters of safety, liquidity, and yield, in order of highest to lowest priority:

3.1 Safety

Safety of principal is the foremost objective of the investment program. Investments of Valley Water will be undertaken in a manner that seeks to ensure the preservation of capital. Valley Water seeks to mitigate credit risk by requiring that all investments be in obligations whose senior long-term debt rating is rated by at least two of the three national rating agencies. The required ratings must be at least Aa3 by Moody's Investor Services, AA- by Standard & Poor's rating agency, or AA- by Fitch Ratings Service. This excludes funds placed with the Local Agency Investment Fund (LAIF) and Federal Deposit Insurance Corporation (FDIC) or National Credit Union Administration (NCUA) protected investments in banks or credit unions. In addition, Commercial Paper investments will also carry short-term ratings by at least two of the three national rating agencies of P-1 by Moody's Investor Services, A-1 by Standard & Poor's, or F-1 by Fitch. Risk related to adverse changes in interest rates is alleviated by maturity and instrument diversification. Please refer to Exhibit B for a summary of credit rating scales.

3.2 Liquidity

In order to ensure adequate liquidity, the average life of the investment portfolio of Valley Water shall be maintained at approximately two and one half (2.5) years, but may be adjusted from time-to-time to meet ongoing cash flow needs of the portfolio.

3.3 Return on Investment

Valley Water's investment portfolio shall be designed with the objective of attaining the greatest yield to maturity consistent with the preservation of capital and the maintenance of adequate liquidity.

3.4 Socially Responsible Investment

In addition to the investment objectives of safety, liquidity, and yield, Valley Water encourages investing in corporate securities, banking institutions and state agencies that meet the ESG factors. Valley Water shall use best efforts to follow the ESG Guiding Principles and utilize the Investment Evaluation Scorecard to evaluate and approve such investments to ensure compliance with the ESG factors (Appendix 1).

3.4.1 The ESG factor shall include considerations for local California based businesses.

3.5 California Bank Investments

To the extent permitted by California Government Code, while meeting Valley Water's investment objectives for safety, liquidity and yield, Valley Water encourages investing in Certificates of Deposit issued by California based banks, up to the Federal Deposit Insurance Corporation limit at the time of such investment which is currently set at $250,000, and up to 30% of the portfolio, as amended

3.5.1 Keeping investments to local banks, within the Bay Area, to keep money at home and jobs local; invest only in banks with below $10 billion in assets; and keep a minimum of 4% of liquid cash in banks with $10 billion in assets and 1% in banks with $2 billion in assets for a limited of 5 years (short term) at the discretion of the treasurer; such investments may be in the form of collateralized deposits, FDIC/NCUA insured CDs, CDARS, or any other legally allowable deposits.

4.0 DELEGATION OF INVESTMENT AUTHORITY

California Government Code Section 53607 provides the authority for the legislative body of the local agency to delegate for one-year periods to the Treasurer of the local agency the full responsibility to invest or reinvest local agency funds. Furthermore, Government Code Section 53608 requires the Board to delegate the authority to deposit funds for safekeeping with a federal or state association (as defined by Section 5102 of the Financial Code), a trust company or state or national bank located within this state or with the Federal Reserve Bank of San Francisco or any branch thereof within this state, or with any Federal Reserve bank or with any state or national bank locate in any city designated as a reserve city by the Board of Governors of the Federal Reserve System.

4.1 Board of Directors

The Board of Directors delegates to the District Treasurer-Chief Financial Officer, who will be designated by the Chief Executive Officer (or any acting or interim of such position), or his or her designee, the authority to invest, or deposit for safekeeping, as far as possible, all money belonging to, or in the custody of, Valley Water pursuant to the Title 5, Division 2, Part 1, Chapter 4, Article 1 Investment of Surplus (53600 – 53610) and Article 2 Deposit of Funds (53630-53686) of the California Government Code ("Government Code") and as directed by the policies of the Board.

4.2 District Treasurer

The District Treasurer delegates the execution of daily investment transactions to the Treasury and Debt Officer. Under the direction of the Chief Financial Officer (CFO), the Treasury and Debt Officer will invest funds pursuant to the quarterly investment strategy approved by the Investment Committee and within the parameters established by the Investment Policy.

4.3 Treasury and Debt Officer

The CFO delegates the execution of daily investment transactions to the designated support staff when the Treasury and Debt Officer is absent.

4.4 Investment Committee

The Investment Committee meets once quarterly to review cash management performance and the Investment Policy and to map out the investment strategy for the coming quarter. The Investment Committee is comprised of the District Treasurer/CFO, District Counsel or his/her designee, the Financial Services Unit Manager, the Treasury/Debt Officer, and treasury support staff, if any.

5.0 ETHICS AND CONFLICTS OF INTEREST

The District Treasurer and any other Valley Water staff member or contract employee having influence over the investment decision process will refrain from personal business activity that could conflict with proper execution of the investment program or which could impair the ability to make impartial investment decisions. Further, the District Treasurer and any other Valley Water staff member or contract employee will refrain from making, participating in making, or in any way using their official position to influence a Valley Water investment decision in which they know or have reason to know they have a disqualifying conflict of interest as described in the Political Reform Act and the Fair Political Practices Commission Guidelines implementing the Act.

6.0 AUTHORIZED FINANCIAL INTERMEDIARIES

The Treasury and Debt Officer will maintain a list of broker/dealers authorized to provide investment services. These may include primary dealers or regional dealers. All broker/dealers who desire to become qualified broker/dealers for investment transactions must participate in the Broker/Dealer selection process managed by the Treasury and Debt Officer that takes place at least once every three years. The participating broker/dealers must provide all the documentation, and complete all other requirements specified in the Broker/Dealers selection criteria.

Selection of broker/dealers authorized to engage in transactions with Valley Water shall be at the sole discretion of Valley Water. Minimum assets of the company will be $5 million. The Treasury and Debt Officer and CFO will conduct an annual review of the financial condition of qualified broker/dealers.

7.0 AUTHORIZED INVESTMENTS, MATURITIES, ISSUER AND PORTFOLIO LIMITS

Valley Water shall comply with Code[1], as amended from time to time, and invest in the authorized securities described in this section. Where this section specifies a percentage limitation for a particular category of investment, that percentage is applicable only at the date of purchase. Where this section does not specify a limitation on the remaining maturity, no investment shall be made in any security that at the time of the investment has a term remaining to maturity in excess of five (5) years. The five-year limitation may be waived provided that the legislative body has granted express authority to make that investment either specifically or as a part of an investment program approved by the legislative body no less than three (3) months prior to the investment.

7.1 U.S. Government

United States Treasury Bills, Notes, and Bonds or those obligations for which the faith and credit of the United States are pledged for the payment of principal and interest.

	Valley Water Policy	Government Code
Maturity Limit	5 years	5 years
Portfolio Limit	None Specified	None Specified
Issuer Limit	None Specified	None Specified
Minimum Credit Rating	See Section 3.1—Safety	None Specified

[1] Refer to California Debt and Investment Advisory Commission Update for 2019, for details regarding state law changes effective as of January 1, 2019, CDIAC 19.01. http://www.treasurer.ca.gov/cdiac/LAIG/guideline.pdf

7.2 U.S. Agencies

Obligations issued by the following federal-related institutions and government-sponsored entities where the implied and moral support of the U.S. Government is pledged for the payment of principal and interest. They may be either bullet (non-callable) or callable issues:

Federal National Mortgage Association
Federal Farm Credit Banks
Federal Home Loan Bank
Federal Agricultural Mortgage Corporation of America
Federal Home Loan Mortgage Corporation
Tennessee Valley Authority

	Valley Water Policy	**Government Code**
Maturity Limit	5 years	5 years
Portfolio Limit	None Specified	None Specified
Issuer Limit	None Specified	None Specified
Minimum Credit Rating	See Section 3.1—Safety	None Specified

7.3 Bankers Acceptances

Bills of exchange or time drafts drawn on and accepted by a commercial bank, otherwise known as Bankers Acceptances, which are eligible for purchase by the Federal Reserve System.

	Valley Water Policy	**Government Code**
Maturity Limit	180 days	180 days
Portfolio Limit	40%	40%
Issuer Limit	12%**	30%
Minimum Credit Rating	See Section 3.1—Safety	None Specified

Issuer Limit of 12% is defined as **4.8% of the total portfolio book value
(12% issuer limit x 40% portfolio limit = 4.8%) for each issuer.

7.4 Commercial Paper

Commercial Paper (CP) issued by corporations that are organized and operating within the United States and having total assets in excess of US $500 million. Purchases of eligible Commercial Paper may not exceed 10 percent of the issuer's outstanding Commercial Paper program.

	Valley Water Policy	Government Code
Maturity Limit	90 days	270 days
Portfolio Limit	15%	25%
Issuer Limit	12%** of portfolio limit and 10% of the issuer's CP outstanding	May not exceed 10% of the issuer's CP outstanding.
Minimum Credit Rating (at least 2 ratings)	A-1 (short-term)/ AA- (long-term, if available) or equivalent	A-1 (short-term)/ A (long-term, if available) or equivalent

Issuer Limit of 12% is defined as **1.8% of the total portfolio book value (12% issuer limit x 15% portfolio limit = 1.8%) for each parent company.

7.5 Negotiable Certificates of Deposit

Negotiable Certificates of Deposit issued by a nationally or state-chartered bank, a savings association or a federal association (as defined by Section 5102 of the Financial Code), a state or federal credit union, or by a state-licensed branch of a foreign bank.

	Valley Water Policy	Government Code
Maturity Limit	5 years	5 years
Portfolio Limit	30%	30%
Issuer Limit	12%**	None Specified
Minimum Credit Rating (at least 2 ratings), or FDIC/NCUA insured	AA- (long-term) or equivalent	None Specified

Issuer Limit of 12% is defined as **3.6% of the total portfolio book value (12% issuer limit x 30% portfolio limit = 3.6%) for each issuer.

7.6 Time Certificates of Deposit

Per Section 53601.8 of the Government Code, a local agency that has the authority under law to invest funds, at its discretion, may invest a portion of its surplus funds in deposits at a commercial bank, savings bank, savings and loan association, or credit union that uses a private sector entity that assists in the placement of deposits under certain conditions, including FDIC and NCUA insurance.

	Valley Water Policy	Government Code
Maturity Limit	5 years	5 years
Portfolio Limit	5%	30%
Issuer Limit	Current FDIC/NCUA Insurance Limit ($250,000) and FDIC/NCUA membership	Current FDIC/NCUA Insurance Limit ($250,000) and FDIC/NCUA membership
Minimum Credit Rating	'Satisfactory' Community Reinvestment Act (CRA)	None Specified

7.7 Repurchase Agreements

Repurchase Agreements as defined by the purchase of securities (approved under Sections 1 and 2 of this document) by Valley Water pursuant to an agreement whereby the seller will repurchase the securities on a specified date at a specified price. Valley Water requires delivery of the purchased securities to Valley Water's custody bank via book-entry prior to payment for such securities. All Repurchase Agreements will operate under the industry-standard Public Securities Association Master Repurchase Agreement which must be executed prior to the transaction. Valley Water requires that purchased securities exceed the cash value of the transaction by a minimum of 2 percent to protect against adverse price movements. All collateral relating to outstanding repurchase agreements will be priced daily to ensure the maintenance of 102 percent collateralization. Collateral is limited to those securities listed in Section 7.1 and 7.2.

	Valley Water Policy	Government Code
Maturity Limit	30 days	1 year
Portfolio Limit	None Specified	None Specified
Issuer Limit	None Specified	None Specified
Minimum Credit Rating	See Section 3.1—Safety	None Specified

7.8 Medium-Term Notes

Corporate Medium-Term Notes issued by corporations organized and operating in the United States or by depository institutions licensed by the United States and operating within the United States.

	Valley Water Policy	Government Code
Maturity Limit	5 years	5 years
Portfolio Limit	15%	30%
Issuer Limit	12%**	None Specified
Minimum Credit Rating (at least 2 ratings)	AA- (long-term) or equivalent	A or equivalent

Issuer Limit of 12% is defined as **1.8% of the total portfolio book value (12% issuer limit x 15% portfolio limit = 1.8%) for each parent company.

7.9 Municipal Obligations

Municipal obligations issued by a municipality within the State of California, including obligations payable solely out of the revenues from a revenue-producing property owned, controlled, or operated by the local agency. This may include Bonds, notes, warrants, or other evidences of indebtedness of a local agency within this state, including bonds payable solely out of the revenues from a revenue-producing property owned, controlled, or operated by the local agency, or by a department, board, agency, or authority of the local agency.

Registered treasury notes or bonds of the State of California or any of the other 49 states, including bonds payable solely out of the revenues from a revenue producing property owned, controlled or operated by the state or by a department, board, agency or authority of the state.

	Valley Water Policy	Government Code
Maturity Limit	5 years	5 years
Portfolio Limit	15%	None Specified
Issuer Limit	12%**	None Specified
Minimum Credit Rating (at least 2 ratings)	AA- or equivalent	None Specified

Issuer Limit of 12% is defined as **1.8% of the total portfolio book value (12% issuer limit x 15% portfolio limit = 1.8%) for each issuer.

7.10 Local Agency Investment Fund (LAIF)

Valley Water may place funds with LAIF up to the maximum allowable amount as stipulated by LAIF and amended from time to time. LAIF is managed by the State of California Treasurer's Office with the objective of realizing the maximum return consistent with safe and prudent treasury management. Currently LAIF will accept no more than $65 million of an agency's unrestricted funds while placing no constraints on funds relating to unspent bond proceeds.

7.11 Mutual Funds

Mutual funds invested in U.S. Government securities which strive to maintain a price of $1.00 per share (Government money market funds) with a minimum of $500 million in total portfolio value and a rating by at least two rating agencies of Aaa by Moody's and AAA by Standard & Poor's or Fitch. Investment in such funds shall not exceed 10% of Valley Water's total portfolio book value.

	Valley Water Policy	Government Code
Maturity Limit	Not Applicable	Not Applicable
Portfolio Limit	10%	20%
Issuer Limit	10%	10%
Minimum Credit Rating (at least 2 ratings)	Aaa/AAA	Aaa/AAA

7.12 Supranational Obligations

United States dollar denominated senior unsecured unsubordinated obligations issued or unconditionally guaranteed by the International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC), or Inter-American Development Bank (IADB), with a maximum remaining maturity of five years or less, and eligible for purchase and sale within the United States. Investments under this subdivision shall be rated "AA" or better by two or more national credit rating agencies and shall not exceed 15 percent of Valley Water's total portfolio book value.

	Valley Water Policy	Government Code
Maturity Limit	5 Years	5 Years
Portfolio Limit	15%	30%
Issuer Limit	12%**	--
Minimum Credit Rating (at least 2 ratings)	Aa/AA	Aa/AA

Issuer Limit of 12% is defined as **1.8% of the total portfolio book value (12% issuer limit x 15% portfolio limit = 1.8%) for each issuer.

7.13 Prohibited Investments

7.13.1 Prohibited Investments

Include securities not listed in this section 7, as well as inverse floaters, range notes, interest only strips derived from a pool of mortgages and any security that could result in zero interest accrual if held to maturity, as specified in Section 53601.6 of the California Government Code.

7.13.2 Climate Divestment Investment Restriction

No investments will be made in the top 200 fossil fuel companies that control most of the world's oil, coal and natural gas supplies. See Exhibit C for the list of the 200 companies as defined by the organization, "350.org."

7.13.3 Prohibited Banks

No investments will be made in any banks who do not have an ESG ranking at or better than the "Average/Medium" category, by at least one of the professional ESG research companies such as Sustainalytics, or other equivalent rankings published by other ESG research firms. Small and local banks/credit unions located within the nine Bay Area counties with total assets at or below $10 billion are exempt from this provision.

7.14 Investment Sales Prior to Maturity

While the overall investment management philosophy of the portfolio is based on a passive approach focusing on matching investment maturities with anticipated liabilities in the future, sales of outstanding investment positions prior to maturity are permitted so long as a yield enhancement on the total transaction is achieved. Specifically, the reinvestment proceeds from the sale of an investment position must earn an income flow whose present value is greater than the present value of the sold position considering any capital losses and foregone interest income. In addition, investment positions may be sold if funds are needed for unanticipated expenditures, or if a corporate and bank obligation is downgraded (see section 7.15 below).

Before an investment position can be sold, an analysis must be made showing the benefit of the sale to Valley Water and the impact the sale will have on the investment portfolio. The sales must be reviewed by Valley Water's Investment

Committee. A sale will only be initiated after receiving guidance from the committee members and authorization by the District Treasurer.

7.15 Downgrade Provisions

Pursuant to Valley Water's investment policy, the minimum credit criteria for the purchase of municipal, corporate and bank obligations is a rating by two of the three major rating agencies of Aa3 by Moody's Investor Services, AA- by Standard & Poor's Credit Rating Agency and Fitch at the time the investment is purchased. If an outstanding investment is downgraded such that it is below the minimum credit criteria after purchase date, a credit analysis will be performed within two business days and a recommendation made to the Investment Committee on whether the investment will be held or sold. Such a review will give consideration to the time to maturity remaining on the life of the security, specific discussions with Fitch, Standard & Poor's and/or Moody's Investor Services, and credit analysis by staff.

7.16 Dropped Rating

Pursuant to Valley Water's investment policy, the minimum credit criteria for the purchase of municipal, corporate and bank obligations is a rating by two of the three major rating agencies of Aa3 by Moody's Investor Services and AA- by Standard & Poor's Credit Rating Agency, and Fitch at the time the investment is purchased. If the rating on an outstanding investment is no longer reported by the rating agency for any reason, and the other rating(s) remain the same as at the time of purchase, the investment will remain in the portfolio. If the other rating(s) are downgraded, section 7.15 downgrade provisions will be followed. An analysis of the dropped rating will be initiated to determine the cause of dropped rating, and the findings will be reported to the investment committee within two business days.

8.0 COLLATERAL

As required by Government Code Section 53652, all deposits must be secured at all times with eligible securities pursuant to Government Code Sections 53656 and 53657. Valley Water further restricts collateralization as follows:

8.1 Repurchase Agreements

All transactions will be collateralized only by Government and Agency securities defined in Sections 7.1 and 7.2 of the Investment Policy at a level equal to, or greater than, 102 percent of the principal cash value of the investment principal. All transactions will be executed on a delivery versus payment basis and will be safekept by Valley Water's Custodial Agent. All collateral on outstanding repurchase agreements will be priced daily.

8.2 Time Certificates of Deposits

Pursuant to Government Code Section 53653, a Treasurer may, at his/her discretion, waive security requirements for such portion of deposits that are insured pursuant to federal law, investments in Time CDs may not exceed the current FDIC protected amount. As such, the Treasurer waives the security required by Government Code Section 53652 as long as the depository maintains FDIC insurance for public deposits.

8.3 Uninvested Balances

From time to time, Valley Water may leave funds uninvested in its checking account in order to meet anticipated disbursements. Valley Water requires that the depository holding such funds be fully collateralized pursuant to Government Code Section 53652. Eligible securities held as collateral shall have a market value in excess of the total amount of all deposits of a depository as follows:

- Government securities at least 10 percent in excess
- Mortgage backed securities at least 50 percent in excess
- Letters of credit at least 5 percent in excess

9.0 SAFEKEEPING AND CUSTODY

All security transactions entered into by Valley Water will be executed on a delivery versus payment basis and evidenced by safekeeping receipts from Valley Water's custodial agent. The only exception will be investments with the LAIF, nonnegotiable Time CDs, and money market accounts.

10.0 DIVERSIFICATION

In an effort to reduce portfolio risk and volatility while maintaining market average rates, Valley Water will diversify its investments with respect to instrument type, issuer, and maturity.

10.1 Instrument Type

To diversify Valley Water's portfolio by type, it should contain a variety of authorized investment instruments. California Government Code Sections 53601 et seq. and 53635 et seq. limit the maximum amount of some of the authorized investment instruments as a percentage of the total investment portfolio. Valley Water has added additional percentage restrictions on some of the instruments as outlined in section 7 above.

10.2 Maximum Maturities

California Government Code Sections 53601 et seq. and 53635 et seq. state that except as specifically limited in the code sections, no investment shall be made in a security that at the time of investment has more than five (5) years to maturity, unless the Board has given express authority to do so no less than three months prior to the purchase of such security. Valley Water has further limited the maximum maturities on some investment securities as outlined in section 7 above. LAIF and authorized mutual funds have no specific maturity date and are, therefore, exempt from the five year limit.

10.3 Maximum Issuer Limits

There is no maximum issuer limit for U.S. Treasury obligations, permitted Federal Agency obligations, LAIF, and collateralized Repurchase Agreements outlined in Section 7 above. For all other investment instruments, certain maximum issuer limits are applicable as outlined in section 7 above. Furthermore, as stipulated in Section 7.6 above, no more than the amount insured by the FDIC, which is currently $250,000 per account, may be invested in the issuer of nonnegotiable Time CDs.

11.0 INTERNAL CONTROLS

A system of internal controls will be maintained to ensure compliance with federal and state regulations in addition to ensuring prudent cash management and proper segregation of duties.

11.1 Investment Committee

Quarterly review of cash management activity and compliance to the Investment Policy is performed by the Investment Committee through a review of investment status reports supplied to the Investment Committee by the Treasury and Debt Officer.

11.2 Treasurer Review

The CFO or his/her designate shall perform daily, weekly and monthly reviews of investment transactions executed by the Treasury and Debt Officer to ensure compliance to all applicable regulations, policies, procedures, and guidelines. In the CFO's absence, the Treasury and Debt Officer will perform the review.

11.3 Annual Audit

Valley Water's portfolio is included in the annual review of Valley Water's financial management program by an independent outside audit firm.

11.4 Investment Policy Compliance Checklist

On a monthly basis, accounting staff reviews the investment portfolio to verify its compliance with the Government Code and the Investment Policy. A report is prepared stating that the portfolio is in compliance, or which items are out of compliance.

12.0 PERFORMANCE REPORTING

The investment portfolio will be designed to obtain a market average rate of return during budgetary and economic cycles, taking into careful consideration Valley Water's risk tolerance and liquidity requirements.

12.1 The Benchmark

Valley Water will strive to maintain a yield within 15 basis points (0.15%) of the 2-year floating average of the twenty-four month Treasury-note rate.

13.0 REPORTING

The District Treasurer will ensure that investment reporting is performed in order to provide a monitoring system designed to demonstrate compliance to all applicable laws, policies, procedures, and guidelines.

13.1 Weekly Reports

The Treasury and Debt Officer will provide daily reports of Valley Water's cash position and detailed reports of the investment transactions in the portfolio on a weekly basis to the CFO. This report shall include a list of all purchases, sells, exchanges and maturities for the week being reported.

13.2 Monthly Reports

The Treasury and Debt Officer will provide detailed reports of the investment transactions in the portfolio on a monthly basis to the Board of Directors as required by California Government Code Section 53607. This report shall include a list of all purchases, sells, exchanges and maturities for the month being reported.

13.3 Quarterly Reports

The District Treasurer will provide detailed investment reports of the portfolio on a quarterly basis to the Board of Directors pursuant to California Government Code Section 53646. This report shall include type of investment, issuer, date of maturity, par, dollar amount, and market value including source of the valuation. In addition, this report shall also include a statement denoting the ability to meet the agency's expenditure requirements for the next six (6) months. The quarterly report will also include information on all debt funds held by the trustee, in guaranteed investment contracts (GIC), or with any other agent of Valley Water.

13.4 Annual Report

The Investment Policy will be presented to the Board at a public meeting on an annual basis.

14.0 STATEMENT OF DERIVATIVES INVESTMENT GUIDELINE

Valley Water will not invest funds in derivative products based on the following definition of a derivative:

A derivative is a security or a financial arrangement whose value is linked to, or derived from, some underlying index or benchmark. Such examples are floating rate notes whose interest payments may fluctuate in an inverse or a linear relationship to the established benchmark and interest rate swaps. Furthermore, Valley Water will not place funds in securities whose coupons rise or fall based on whether the issuer exercises the call option. This does not include repurchase agreements which are specifically authorized under Section 7.7 of the Investment Policy.

15.0 OTHER PROCEDURES

Valley Water treasury group has compiled an Investment Manual, approved by the Valley Water Investment Committee, which consolidates pertinent procedures related to the cash management function in a single reference manual. Included in this manual is a step-by-step description of the investment process and how investments are identified, chosen, executed, and recorded. Section 2 of this manual gives detailed instructions on completing the daily cash analysis; Section 3 explains preparation procedures for planning to invest; Section 4 details the types of authorized investments; Section 5 explains the process by which the chosen investment transaction is executed and includes delivery and safekeeping instructions; Section 6 lists the accounting procedures for investments; and Section 7 details internal control procedures. Also included in the appendix is a summary of government legislation pertaining to government investing, the Valley Water Investment Policy, and a glossary of key terms.

APPENDIX 1
Environmental, Social, Governance Factors

GUIDING PRINCIPLES

When evaluating potential investments in corporate and financial institution securities, the Investment Committee shall follow the guiding principles:

Negative Screens

No investments shall be made in companies significantly involved in the production or sale of fossil fuels, tobacco, and other products that are environmentally harmful. Furthermore, to the extent possible while maintaining adequate safety, liquidity and yield of the portfolio, no investments shall be made in companies with a demonstrated record of the following:

- poor practices with respect to environmental regulation, greenhouse gas emissions, toxins, hazardous waste or environment justice
- human rights abuse, violations of international law, and/or materially or otherwise supporting repressive regimes
- endangering rural people's access to the land, water and other resources on which their livelihoods depend
- violating labor laws, abusing or otherwise mistreating workers and/or preventing or impeding unionization
- discrimination based on sexual orientation, gender, race, ethnicity, age or disability
- practices which have significant negative effects on affected communities, particularly those with minority or low-income residents
- restriction of access to affordable medicine in the developing world

Positive Screens

To the extent possible while maintaining adequate safety, liquidity and yield of the portfolio, investments shall be made in companies involved in the production of renewable energy and organic food, local food and sustainable agriculture and generally, invest in companies and investments that demonstrate commitment to:

- environmental sustainability, including reducing greenhouse gas emissions and sustainable forestry
- community development and/or investment, particularly in communities with minority or low-income residents
- diversity in hiring, executives and boards with respect to sexual orientation, gender, race, ethnicity
- living wages for all employees and collective bargaining
- transparency and accountability in corporate governance

ENVIRONMENTAL, SOCIAL, GOVERNANCE (ESG) FACTORS

ENVIRONMENTAL	
Category	**Considerations**
Climate change & pollution	Does the company have a stated commitment to emissions reduction? What is the firm doing to combat climate change? Does the firm participate in carbon crediting/offset programs? Has the company been cited for excessive pollution? Does the company have an emissions reduction program?
Energy efficiency & waste management	Has the firm employed energy efficient design or retrofits in its buildings? Does the firm participate in E-Waste recycling programs? Do the operations require heavy use of chemicals?
Water use & management	Where does the company get its water? Have they installed smart filling stations and efficient fixtures? Does the company operate in water-stressed areas?
Land use & management	Are company facilities designed to minimize damage to the surrounding habitat? Does the company actively participate in greening or reforestation efforts? Does the company encourage alternative methods of transportation to and from work; if so, does building design facilitate these methods?
SOCIAL	
Category	**Considerations**
Stakeholder relations	Are customers treated as key stakeholders in the company? Do minority shareholders have an outlet to voice opinions regarding company operations? Are fair labor standards enforced? Do workers have representation in order to bring concerns to management?
Value chain management	Does the firm's supply chain reflect adequate working conditions and respect for human rights? Does the company hold suppliers to stated ethical and moral standards? Does the company have any outstanding litigation over its products; are the products generally safe? Are suppliers practicing sustainable production methods?
Community Impact	Is the firm engaged with local non-profits to combat social issues in the community? Does the company donate a share of profits to advocate for impact issues? Does the company make an effort to hire and promote employees from the surrounding community?
Local/California business?	In what city is the firm located? Is the business located in the San Jose-San Francisco Metropolitan Statistical Area? Is the business located in California?

CORPORATE GOVERNANCE	
Category	**Considerations**
Diversity	Are the workplace and board comprised of people from diverse backgrounds and ethnicities? Does the board have a roughly equal number of men and women?
Compensation	What is the ratio of executive pay to worker pay? Is executive compensation based on identifiable metrics? Are employees receiving equal pay for equal work?
Accountability & audit quality	Does the company employ a large number of special purpose vehicles and other off-balance sheet entities? Does the audit clearly stake risks to which the firm is exposed?
Cyber/Information Security	Does the company have a stated cyber/information security policy? Has the company been hacked in the last 3 years? What corrections/improvements have been made to prevent future hacks?
Transparency	Are internal discussions about the company kept hidden, or does the company routinely publish information for public consumption? Are the firm's financials easily understood? Is the firm readily accessible and do they respond to requests for comment?

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EXHIBIT A
Glossary of Key Terms

AGENCIES: Federal agency securities and/or Government-sponsored enterprises.

BANKERS' ACCEPTANCE (BA): A draft or bill or exchange accepted by a bank or trust company. The accepting institution guarantees payment of the bill, as well as the issuer.

BOOK VALUE: The value at which a security is carried on the financial records of its owner. This value may be the original cost of acquisition of the security or original cost adjusted by amortization of a premium or accretion of a discount. The book value may differ from the security's current market value.

BENCHMARK: A comparative base for measuring the performance or risk tolerance of the investment portfolio. A benchmark should represent a close correlation to the level of risk and the average duration of the portfolio's investments.

BROKER: A broker brings buyers and sellers together for a commission.

CERTIFICATE OF DEPOSIT (CD): A time deposit with a specific maturity evidenced by a Certificate. Large-denomination CD's are typically negotiable.

COLLATERAL: Securities, evidence of deposit or other property, which a borrower pledges to secure repayment of a loan. Also refers to securities pledged by a bank to secure deposits of public monies.

DELIVERY VERSUS PAYMENT: There are two methods of delivery of securities: delivery versus payment and delivery versus receipt. Delivery versus payment is delivery of securities with an exchange of money for the securities. Delivery versus receipt is delivery of securities with an exchange of a signed receipt for the securities.

DERIVATIVES: (1) Financial instruments whose return profile is linked to, or derived from, the movement of one or more underlying index or security, and may include a leveraging factor; or (2) financial contracts based upon notional amounts whose value is derived from an underlying index or security (interest rates, foreign exchange rates, equities or commodities).

DISCOUNT: The difference between the cost price of a security and its maturity when quoted at lower than face value. A security selling below original offering price shortly after its sale also is considered to be at a discount.

DISCOUNT SECURITIES: Non-interest bearing money market instruments that are issued a discount and redeemed at maturity for full face value, *e.g.,* U.S. Treasury Bills.

DIVERSIFICATION: Dividing investment funds among a variety of securities offering independent returns.

FEDERAL CREDIT AGENCIES: Agencies of the Federal government set up to supply credit to various classes of institutions and individuals, *e.g.*, S&L's, small business firms, students, farmers, farm cooperatives, and exporters.

FEDERAL DEPOSIT INSURANCE CORPORATION (FDIC): A federal agency that insures bank deposits, currently up to $250,000 per deposit.

FEDERAL FUNDS RATE: The rate of interest at which Fed funds are traded. This rate is currently pegged by the Federal Reserve through open-market operations.

FEDERAL HOME LOAN BANKS (FHLB): Government sponsored wholesale banks (currently 12 regional banks), which lend funds and provide correspondent banking services to member commercial banks, thrift institutions, credit unions and insurance companies. The mission of the FHLBs is to liquefy the housing related assets of its members who must purchase stock in their district Bank.

FEDERAL NATIONAL MORTGAGE ASSOCIATION (FNMA): FNMA, like GNMA was chartered under the Federal National Mortgage Association Act in 1938. FNMA is a federal corporation working under the auspices of the Department of Housing and Urban Development (HUD). It is the largest single provider of residential mortgage funds in the United States. Fannie Mae, as the corporation is called, is a private stockholder-owned corporation. The corporation's purchases include a variety of adjustable mortgages and second loans, in addition to fixed-rate mortgages. FNMA's securities are also highly liquid and are widely accepted. FNMA assumes and guarantees that all security holders will receive timely payment of principal and interest.

FEDERAL OPEN MARKET COMMITTEE (FOMC): Consists of seven members of the Federal Reserve Board and five of the twelve Federal Reserve Bank Presidents. The President of the New York Federal Reserve Bank is a permanent member, while the other Presidents serve on a rotating basis. The Committee periodically meets to set Federal Reserve guidelines regarding purchases and sales of Government Securities in the open market as a means of influencing the volume of bank credit and money.

LIQUIDITY: A liquid asset is one that can be converted easily and rapidly into cash without a substantial loss of value. In the money market, a security is said to be liquid if the spread between bid and asked prices is narrow and reasonable size can be done at those quotes.

MARKET VALUE: The price at which a security is trading and could presumably be purchased or sold.

MASTER REPURCHASE AGREEMENT: A written contract covering all future transactions between the parties to repurchase—reverse repurchase agreements that establishes each party's rights in the transactions. A master agreement will often specify, among other things, the right of the buyer-lender to liquidate the underlying securities in the event of default by the seller borrower.

MATURITY: The date upon which the principal or stated value of an investment becomes due and payable.

MONEY MARKET: The market in which short-term debt instruments (bills, commercial paper, bankers' acceptances, etc.) are issued and traded.

NATIONAL CREDIT UNION ADMINSTRATION: An independent federal agency that insures credit union deposits, currently up to $250,000 per deposit.

PRIMARY DEALER: A group of government securities dealers who submit daily reports of market activity and positions and monthly financial statements to the Federal Reserve Bank of New York and are subject to its informal oversight. Primary dealers include Securities and Exchange Commission (SEC)-registered securities broker-dealers, banks, and a few unregulated firms.

REPURCHASE AGREEMENT (RP OR REPO): A holder of securities sells these securities to an investor with an agreement to repurchase them at a fixed price on a fixed date. The security "buyer" in effect lends the "seller" money for the period of the agreement, and the terms of the agreement are structured to compensate him for this. Dealers use RP extensively to finance their positions. Exception: When the Fed is said to be doing RP, it is lending money that is, increasing bank reserves.

SAFEKEEPING: A service to customers rendered by banks for a fee whereby securities and valuables of all types and descriptions are held in the bank's vaults for protection.

SECONDARY MARKET: A market made for the purchase and sale of outstanding issues following the initial distribution.

SECURITIES & EXCHANGE COMMISSION: Agency created by Congress to protect investors in securities transactions by administering securities legislation.

SEC RULE 15C3-1: See Uniform Net Capital Rule.

TREASURY BILLS: A non-interest bearing discount security issued by the U.S. Treasury to finance the national debt. Most bills are issued to mature in three months, six months, or one year.

TREASURY BONDS: Long-term coupon-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities of more than 10 years.

TREASURY NOTES: Medium-term coupon-bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities from two to 10 years.

UNIFORM NET CAPITAL RULE: Securities and Exchange Commission requirement that member firms as well as nonmember broker-dealers in securities maintain a maximum ratio of Indebtedness to Liquid Capital of 15 to 1; also called net capital rule and net capital ratio. Indebtedness is defined as all money owed to a firm, including margin loans and commitments to purchase securities, one reason new public issues are spread among members of underwriting syndicates. Liquid Capital is defined as cash and assets easily converted into cash.

YIELD: The rate of annual income return on an investment, expressed as a percentage.
(a) INCOME YIELD is obtained by dividing the current dollar income by the current market price

for the security. (b) NET YIELD or YIELD TO MATURITY is the current income yield minus any premium above par or plus any discount from par in purchase price, with the adjustment spread over the period from the date of purchase to the date of maturity of the bond.

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EXHIBIT B
Credit Rating Summary

SHORT-TERM CREDIT RATING DEFINITIONS

Moody's Rating	Moody's Definition	S&P Rating	S&P Definition	Fitch Rating	Fitch Ratings Definition
P-1 **MIG-1** **VMIG-1**	P-1 Issuers (or supporting institutions) rated Prime-1 have a superior ability to repay short-term debt obligations. MIG-1—This designation denotes superior credit quality. Excellent protection is afforded by established cash flows, highly reliable liquidity support, or demonstrated broad-based access to the market for refinancing. VMIG-1—This designation denotes superior credit quality. Excellent protection is afforded by the superior short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.	**SP-1** **A-1**	Strong capacity to pay principal and interest. An issue determined to possess a very strong capacity to pay debt service is given a plus (+) designation. Degree of safety regarding timely payment is strong. Those issues determined to possess extremely strong safety characteristics are denoted by a plus (+) sign.	**F1**	Highest credit quality. Indicates the strongest capacity for timely payment of financial commitments.
P-2	P-2 Issuers (or supporting institutions) rated Prime-2 have a strong ability to repay short-term debt obligations.	**SP-2**	Satisfactory capacity to pay principal and interest, with some vulnerability to adverse financial and economic changes over the term of the notes.	**F2**	Good credit quality. A satisfactory capacity for timely payment of financial

Moody's Rating	Moody's Definition	S&P Rating	S&P Definition	Fitch Rating	Fitch Ratings Definition
MIG-2 **VMIG-2**	MIG-2—This designation denotes strong credit quality. Margins of protection are ample, although not as large as in the preceding group. VMIG-2—This designation denotes strong credit quality. Good protection is afforded by the strong short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.	**A-2**	Capacity for timely payment on issues with this designation is satisfactory. However, the relative degree of safety is not as high as for issues designated 'A-1.'		commitments, but the margin of safety is not as great as in the case of the higher ratings.
P-3 **MIG-3** **VMIG-3**	P-3 Issuers (or supporting institutions) rated Prime-3 have an acceptable ability to repay short-term obligations. MIG-3—This designation denotes acceptable credit quality. Liquidity and cash-flow protection may be narrow, and market access for refinancing is likely to be less well-established. VMIG-3—This designation denotes acceptable credit quality. Adequate protection is afforded by the satisfactory short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.	**SP-3** **A-3**	Speculative capacity to pay principal and interest. Issues carrying this designation have an adequate capacity for timely payment. However, they are more vulnerable to the adverse effects of changes in circumstances than obligations carrying the higher designations.	**F3**	Fair credit quality. The capacity for timely payment of financial commitments is adequate; however, near-term adverse changes could result in a reduction to noninvestment grade.

Moody's Rating	Moody's Definition	S&P Rating	S&P Definition	Fitch Rating	Fitch Ratings Definition
NP **Speculative Grade (SG)**	Issuers (or supporting institutions) rated Not Prime do not fall within any of the Prime rating categories. MIG-SG S This designation denotes speculative-grade credit quality. Debt instruments in this category may lack sufficient margins of protection. VMIG-SG This designation denotes speculative-grade credit quality. Demand features rated in this category may be supported by a liquidity provider that does not have an investment grade short-term rating or may lack the structural and/or legal protections necessary to ensure the timely payment of purchase price upon demand.	**B**	Only speculative capacity for timely payment.	**B**	Speculative. Minimal capacity for timely payment of financial commitments, plus vulnerability to near term adverse changes in financial and economic conditions.
		C	Doubtful capacity for payment.	**C**	High default risk. Default is a real possibility. Capacity for meeting financial commitments is solely reliant upon a sustained, favorable business and economic environment.
		D	Default.	**D**	Default. Denotes actual or imminent payment default.

LONG-TERM CREDIT RATINGS

Moody's Rating	Moody's Definition	S&P Rating	S&P Definition	Fitch Rating	Fitch Ratings Definition
Aaa1 **Aaa2** **Aaa3**	Obligations rated Aaa are judged to be of the highest quality, subject to the lowest level of credit risk.	**AAA+** **AAA** **AAA-**	An obligation rated 'AAA' has the highest rating assigned by Standard & Poor's. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.	**AAA+** **AAA** **AAA-**	**Highest credit quality.** 'AAA' ratings denote the lowest expectation of credit risk. They are assigned only in cases of exceptionally strong capacity for payment of financial commitments. This capacity is highly unlikely to be adversely affected by foreseeable events.
Aa1 **Aa2** **Aa3**	Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.	**AA+** **AA** **AA-**	An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.	**AA+** **AA** **AA-**	**Very high credit quality.** 'AA' ratings denote expectations of very low credit risk. They indicate very strong capacity for payment of financial commitments. This capacity is not significantly vulnerable to foreseeable events.
A1 **A2** **A3**	Obligations rated A are judged to be upper-medium grade and are subject to low credit risk.	**A+** **A** **A-**	An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.	**A+** **A** **A-**	**High credit quality.** 'A' ratings denote expectations of low credit risk. The capacity for payment of financial commitments is considered strong. This capacity may, nevertheless, be more vulnerable to adverse business or economic conditions than is the case for higher ratings.

Moody's Rating	Moody's Definition	S&P Rating	S&P Definition	Fitch Rating	Fitch Ratings Definition
Baa1 **Baa2** **Baa3**	Obligations rated Baa are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics.	**BBB+** **BBB** **BBB-**	An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.	**BBB+** **BBB** **BBB-**	**Good credit quality.** 'BBB' ratings indicate that expectations of credit risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity.
Ba1 **Ba2** **Ba3**	Obligations rated Ba are judged to be speculative and are subject to substantial credit risk.	**BB+** **BB** **BB-**	An obligation rated 'BB' is less vulnerable to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions, which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.	**BB+** **BB** **BB-**	**Speculative.** 'BB' ratings indicate an elevated vulnerability to credit risk, particularly in the event of adverse changes in business or economic conditions over time; however, business or financial alternatives may be available to allow financial commitments to be met.
B1 **B2** **B3**	Obligations rated B are considered speculative and are subject to high credit risk.	**B+** **B** **B-**	An obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB,' but the obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitment on the obligation.	**B+** **B** **B-**	**Highly speculative.** 'B' ratings indicate that material credit risk is present

Moody's Rating	Moody's Definition	S&P Rating	S&P Definition	Fitch Rating	Fitch Ratings Definition
Caa1 **Caa2** **Caa3**	Obligations rated Caa are judged to be speculative of poor standing and are subject to very high credit risk.	**CCC+** **CCC** **CCC-**	An obligation rated 'CCC' is currently vulnerable to nonpayment, and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation.	**CCC+** **CCC** **CCC-**	**Substantial credit risk.** 'CCC' ratings indicate that substantial credit risk is present.
Ca1 **Ca2** **Ca3**	Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.	**CC+** **CC** **CC-**	An obligation rated 'CC' is currently highly vulnerable to nonpayment.	**CC+** **CC** **CC-**	**Very high levels of credit risk.** 'CC' ratings indicate very high levels of credit risk
C1 **C2** **C3**	Obligations rated C are the lowest rated and are typically in default, with little prospect for recovery of principal or interest.	**C+** **C** **C-**	A 'C' rating is assigned to obligations that are currently highly vulnerable to nonpayment, obligations that have payment arrearages allowed by the terms of the documents, or obligations of an issuer that is the subject of a bankruptcy petition or similar action which have not experienced a payment default. Among others, the 'C' rating may be assigned to subordinated debt, preferred stock or other obligations on which cash payments have been suspended in accordance with the instrument's terms or when preferred stock is the subject of a distressed exchange offer, whereby some or all of the issue is either repurchased for an amount of cash or replaced by other instruments having a total value that is less than par.	**C+** **C** **C-**	**Exceptionally high levels of credit risk.** 'C' indicates exceptionally high levels of credit risk.

Moody's Rating	Moody's Definition	S&P Rating	S&P Definition	Fitch Rating	Fitch Ratings Definition
		D+ **D** **D-**	An obligation rated 'D' is in payment default. The 'D' rating category is used when payments on an obligation are not made on the date due even if the applicable grace period has not expired, unless Standard & Poor's believes that such payments will be made during such grace period. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of similar action if payments on an obligation are jeopardized. An obligation's rating is lowered to 'D' upon completion of a distressed exchange offer, whereby some or all of the issue is either repurchased for an amount of cash or replaced by other instruments having a total value that is less than par.	**D**	**Default.** Indicates a default. Default generally is defined as one of the following: • Failure to make payment of principal and/or interest under the contractual terms of the rated obligation; • The distressed exchange of an obligation, where creditors were offered securities with diminished structural or economic terms compared with the existing obligation to avoid a probable payment default.

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EXHIBIT C
Top 200 Listed Companies by Estimated Carbon Reserves

Rank	Coal Companies	Coal Gt CO_2	Rank	Oil and Gas Companies	Oil Gt CO_2	Gas Gt CO_2	Total O&G Gt CO_2
1	Coal India	32.039	**1**	Gazprom	7.046	36.844	43.889
2	Shaanxi Coal Industry	28.885	**2**	Rosneft	11.536	5.939	17.475
3	Adani Enterprises	25.311	**3**	PetroChina	3.363	4.309	7.671
4	China Shenhua Energy	22.305	**4**	ExxonMobil	3.956	3.079	7.035
5	Inner Mongolia Yitai Coal	14.849	**5**	BP	4.309	2.364	6.672
6	Yanzhou Coal Mining	10.633	**6**	Lukoil	5.285	1.280	6.565
7	China Coal Energy	9.492	**7**	Royal Dutch Shell	2.112	2.209	4.322
8	Public Power	9.339	**8**	Chevron	2.473	1.567	4.040
9	Exxaro Resources	8.928	**9**	Petrobras	3.516	0.508	4.023
10	Glencore	8.369	**10**	Novatek	0.550	3.377	3.927
11	Peabody Energy	7.998	**11**	Total	2.076	1.798	3.873
12	Bukit Asam	7.844	**12**	Tatneft	2.618	0.063	2.681
13	BHP Billiton	7.310	**13**	ENI	1.439	1.217	2.656
14	Foresight Energy	6.759	**14**	ONGC	1.518	0.796	2.314
15	Lu'an Environmental Energy	6.443	**15**	ConocoPhillips	1.236	0.830	2.065
16	BUMI Resources	5.499	**16**	Statoil	1.018	0.798	1.816
17	Shanxi Xishan Coal and Electricity	5.416	**17**	CNOOC	0.983	0.439	1.422
18	Mechel	5.308	**18**	Inpex	0.908	0.328	1.236
19	Mitsubishi	5.128	**19**	Canadian Natural Resources	0.873	0.322	1.195
20	China Coal Xinji Energy	4.873	**20**	Sinopec	0.657	0.391	1.048
21	Raspadskaya OAO	3.968	**21**	Bashneft	1.007	0.000	1.007
22	Alliance Resource Partners	3.893	**22**	Occidental	0.706	0.206	0.912

Rank	Coal Companies	Coal Gt CO_2	Rank	Oil and Gas Companies	Oil Gt CO_2	Gas Gt CO_2	Total O&G Gt CO_2
23	Arch Coal	3.878	**23**	EOG Resources	0.621	0.181	0.802
24	Anglo American	3.592	**24**	Repsol	0.247	0.550	0.797
25	DaTong Coal Industry	3.508	**25**	Antero Resources	0.281	0.513	0.794
26	China Cinda Asset Management	3.316	**26**	Suncor Energy	0.732	0.002	0.733
27	EVRAZ	3.189	**27**	EQT	0.055	0.672	0.727
28	Vale	3.179	**28**	Imperial Oil	0.617	0.020	0.637
29	Rio Tinto	2.710	**29**	Range Resources	0.203	0.429	0.632
30	Severstal	2.661	**30**	Marathon Oil	0.495	0.133	0.628
31	Tata Steel	2.643	**31**	Ecopetrol	0.460	0.167	0.627
32	Westmoreland Coal	2.529	**32**	Anadarko Petroleum	0.374	0.241	0.615
33	Jastrzębska Spółka Węglowa	2.516	**33**	Devon Energy	0.304	0.307	0.611
34	Resource Generation	2.441	**34**	BASF	0.205	0.384	0.589
35	Teck Resources	2.376	**35**	Chesapeake Energy	0.225	0.354	0.579
36	United RUSAL	2.233	**36**	Noble Energy	0.207	0.289	0.497
37	Adaro Energy	2.200	**37**	Apache	0.330	0.156	0.486
38	AGL Energy	2.144	**38**	Continental Resources	0.272	0.207	0.479
39	Shanghai Datun Energy Resources	2.032	**39**	Cabot Oil & Gas	0.020	0.451	0.471
40	Yang Quan Coal	2.023	**40**	BHP Billiton	0.195	0.262	0.458
41	Shanxi Lanhua Sci-Tech	1.959	**41**	Hess	0.327	0.092	0.419
42	Whitehaven Coal	1.946	**42**	YPF	0.235	0.159	0.395
43	Kuzbasskaya Toplivnaya	1.890	**43**	OMV	0.266	0.123	0.389
44	Cloud Peak Energy	1.886	**44**	Cenovus Energy	0.351	0.033	0.385
45	CONSOL Energy	1.807	**45**	Woodside Petroleum	0.042	0.318	0.360
46	South32	1.712	**46**	CONSOL Energy	0.019	0.318	0.337
47	New Hope	1.635	**47**	KazMunaiGas EP	0.290	0.026	0.316

Rank	Coal Companies	Coal Gt CO_2	Rank	Oil and Gas Companies	Oil Gt CO_2	Gas Gt CO_2	Total O&G Gt CO_2
48	Yancoal Australia	1.622	**48**	Southwestern Energy	0.019	0.265	0.284
49	NACCO Industries	1.459	**49**	Encana	0.091	0.192	0.283
50	Huolinhe Coal	1.387	**50**	Concho Resources	0.181	0.095	0.277
51	ITOCHU	1.361	**51**	Husky Energy	0.168	0.107	0.275
52	Beijing Haohua Energy Resource	1.317	**52**	Seven Generations Energy	0.158	0.113	0.271
53	NLC India	1.296	**53**	Pioneer Natural Resources	0.199	0.069	0.268
54	Novolipetsk Steel	1.236	**54**	Tourmaline Oil	0.044	0.222	0.265
55	Indika Inti Corpindo	1.182	**55**	SK Innovation	0.263	0.000	0.263
56	Datang International Power Generation	1.147	**56**	QEP Resources	0.119	0.139	0.258
57	Coal of Africa	1.137	**57**	PTT	0.072	0.184	0.256
58	Golden Energy Mines	1.112	**58**	Murphy Oil	0.153	0.102	0.255
59	Jindal Steel & Power	1.033	**59**	Whiting Petroleum	0.198	0.039	0.237
60	Mitsui	0.998	**60**	Sasol	0.157	0.073	0.230
61	Banpu	0.950	**61**	Aker BP	0.224	0.000	0.224
62	Berau Coal Energy	0.942	**62**	California Resources	0.186	0.034	0.220
63	Wesfarmers	0.832	**63**	Crescent Point Energy	0.202	0.018	0.220
64	Up Energy Development	0.826	**64**	Rice Energy	0.000	0.218	0.218
65	Kangaroo Resources	0.794	**65**	Linn Energy	0.071	0.125	0.197
66	Shanxi Meijin Energy	0.784	**66**	Newfield Exploration	0.108	0.074	0.183
67	Mongolian Mining	0.767	**67**	MEG Energy	0.178	0.000	0.178
68	Jizhong Energy	0.742	**68**	Lundin	0.167	0.006	0.173
69	Allete	0.723	**69**	Mitsui	0.063	0.107	0.170
70	Aspire Mining	0.670	**70**	Birchcliff Energy	0.027	0.137	0.164
71	ArcelorMittal	0.640	**71**	Cimarex Energy	0.084	0.080	0.164
72	Hallador Energy	0.599	**72**	EP Energy	0.120	0.040	0.160

Rank	Coal Companies	Coal Gt CO_2	Rank	Oil and Gas Companies	Oil Gt CO_2	Gas Gt CO_2	Total O&G Gt CO_2
73	Vedanta	0.599	**73**	Maersk	0.153	0.000	0.153
74	LG International	0.595	**74**	Santos	0.016	0.133	0.149
75	Rhino Resource Partners	0.560	**75**	Oil India	0.096	0.049	0.145
76	Ramaco Resources	0.555	**76**	Ultra Petroleum	0.013	0.127	0.140
77	Lubelski Węgiel Bogdanka	0.554	**77**	Oil Search	0.022	0.117	0.140
78	CLP Holdings	0.552	**78**	SM Energy	0.075	0.061	0.135
79	Bayan Resources	0.529	**79**	ENGIE	0.033	0.096	0.130
80	Steel Authority of India	0.515	**80**	Painted Pony Petroleum	0.014	0.115	0.129
81	Vimetco	0.512	**81**	WPX Energy	0.088	0.040	0.128
82	Indo Tambangraya Megah (Banpu)	0.508	**82**	ARC Resources	0.045	0.083	0.128
83	Black Hills	0.495	**83**	JX Holdings	0.059	0.068	0.128
84	Monnet Ispat & Energy	0.492	**84**	Gulfport Energy	0.008	0.118	0.126
85	Kinetic Mines and Energy	0.463	**85**	Oasis Petroleum	0.100	0.022	0.123
86	Feishang Anthracite Resources	0.463	**86**	Polish Oil & Gas	0.031	0.091	0.122
87	FirstEnergy	0.463	**87**	PDC Energy	0.075	0.045	0.120
88	Sasol	0.456	**88**	Energen	0.100	0.019	0.119
89	Prairie Mining	0.428	**89**	Peyto E&D	0.009	0.110	0.119
90	Tata Power	0.424	**90**	MOL	0.072	0.047	0.119
91	American Energy	0.415	**91**	Oando	0.051	0.064	0.114
92	Coal Energy	0.414	**92**	Galp Energia	0.099	0.013	0.112
93	Agritrade Resources	0.414	**93**	Denbury Resources	0.105	0.002	0.107
94	Beijing Jingneng Thermal Power	0.411	**94**	National Fuel Gas	0.012	0.091	0.104
95	African Rainbow Minerals	0.400	**95**	Centrica	0.029	0.069	0.098
96	Huadian Power International	0.397	**96**	TAQA	0.051	0.046	0.097
97	Golden Eagle Energy	0.386	**97**	Premier Oil	0.077	0.020	0.097

Rank	Coal Companies	Coal Gt CO_2	Rank	Oil and Gas Companies	Oil Gt CO_2	Gas Gt CO_2	Total O&G Gt CO_2
98	JSW Energy	0.369	**98**	Great Eastern	0.000	0.094	0.094
99	Wollongong Coal	0.353	**99**	Japex	0.042	0.051	0.093
100	TBEA Co	0.329	**100**	DNO International	0.093	0.000	0.093