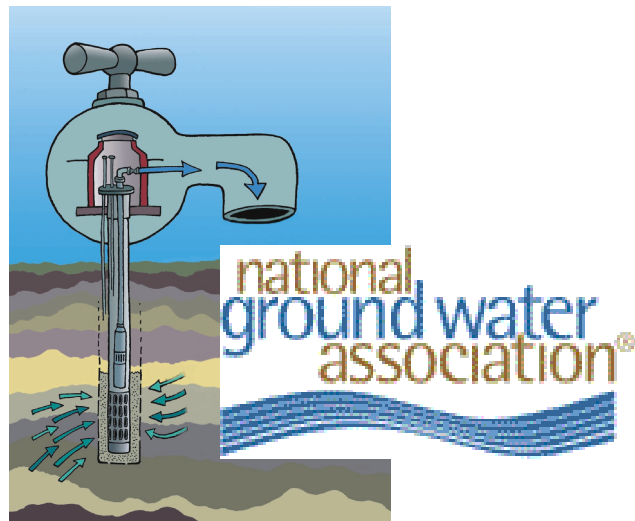


KWR 07.035
23 april 2007

Studiereis Putmanagement Albuquerque, USA

NGWA Ground Water Summit 2007



KWR 07.035
23 april 2007

Studiereis Putmanagement Albuquerque, USA

NGWA Ground Water Summit 2007

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Colofon

Titel

Studiereis Putmanagement Albuquerque, USA

Projectnummer

30.9730.400

Projectmanager

Jan Willem Kooiman

Opdrachtgever

DZH, Brabant Water, Vitens, Evides

Auteurs

Marc Balemans, Nicolette Vernooij

Dit rapport is niet openbaar en slechts verstrekt aan de opdrachtgevers van het Contractonderzoekproject/adviesproject. Eventuele verspreiding daarbuiten vindt alleen plaats door de opdrachtgever zelf.

Inhoud

	Inhoud	1
1	Ground Water summit 2007; aanleiding voor een studiereis	3
	Aanleiding van deze studiereis	3
	Deelnemers	3
2	Reisgegevens	5
	Reisschema	5
	Albuquerque en omgeving	6
	Informatie over het hotel	7
	Informatie voor de thuisblijvers	8
	Praktische informatie voor reis en verblijf	8
3	Programma	13
	Ground Water Summit	13
	Approaches to Optimizing Well Performance	16
4	Brengen en halen	17
	Bedrijfstak	17
	De afzonderlijke bedrijven	17
I	Informatie over New Mexico	19
II	Informatie over Albuquerque	23
III	Abstracts Approaches to Optimizing Well Performance	39

1 Ground Water summit 2007; aanleiding voor een studiereis

Aanleiding van deze studiereis

Van 29 april tot en met 3 mei vindt in Albuquerque, New Mexico USA de ground water summit 2007 plaats. Dit congres wordt georganiseerd door de NGWA, the National Ground Water Association van de USA. Op 1 mei wordt een dag gevuld met lezingen over putten en putmanagement. Namens de Nederlandse en Vlaamse drinkwatersector is Marc Balemans (Kiwa Water Research) gevraagd om een lezing te verzorgen rondom mechanische putverstopping. Kiwa Water Research heeft bij de organisatie twee andere onderwerpen uit het BTO aangedragen; putten aangelegd met een horizontaal gestuurde boring en asset management. Voor deze laatste onderwerpen is door respectievelijk Oasen en Vitens een abstract ingediend. Alledrie de abstracts zijn als presentatie geaccepteerd. Reden om bij de BTO-participanten de behoefte te polsen voor een studiereis naar de USA. Op dit voorstel is door vier Nederlandse waterbedrijven positief gereageerd.

Deelnemers

Aan deze studiereis nemen deel:

Marc Balemans	Kiwa WR	Reisleider, spreker
Pieter Dammers	DZH	
Patrick van der Wens	Brabant Water	
Gertjan Doedens	Vitens	
Rob Lafort	Evides	
Kees van Beek	Kiwa WR	
Harrie Timmer	Oasen	Spreker
Ate Oosterhof	Vitens	Spreker
Bert Vonk	Oasen	

2 Reisgegevens

De studiereis start op 27 april en eindigt op 5 mei. In dit hoofdstuk is verschillende informatie opgenomen over de reis en het verblijf. Het geeft tevens de 'thuisblijvers' de benodigde informatie.

Reisschema

Naast bezoek aan het congres is er ruimte voor eigen invulling. Die is door de deelnemers afzonderlijk of in overleg met elkaar in te vullen.

Het reisschema van de hele groep is weergegeven in onderstaande tabel. Je afzonderlijke reisschema wordt per mail toegezonden.

Tabel 1 Reisschema studiereis putmanagement

Datum, tijdstip	Omschrijving	Vluchtnummer
27 april, 12.30 uur	Verzamelen luchthaven Schiphol Amsterdam, inchecken	
27 april, 13.55 uur	Vertrek naar Albuquerque via Houston	CO 00474
27 april, 17.35	Aankomst Houston, overstap	
27 april, 19.06	Vertrek Albuquerque	CO 26574
27 april, 20.23	Aankomst Albuquerque, transfer naar Hotel	
28 april	Vrije dag	
29 april	Vrije dag	
30 april	NGWA congres, onderwerpen naar keuze	
1 mei	NGWA, <i>Approaches to Optimizing Well Performance</i>	
2 mei	NGWA congres, onderwerpen naar keuze	
3 mei	<i>Field Trip: Water Resources in the Middle Rio Grande Basin</i>	
4 mei, 14.25	Terugreis naar Nederland Vertrek Albuquerque	CO 2771I
4 mei, 19.10	Aankomst Houston, overstap naar Schiphol Amsterdam	CO 0046I
5 mei, 11.50	Aankomst op Schiphol, Amsterdam	

Alle deelnemers vliegen met luchtvaartmaatschappij Continental van Amsterdam naar Albuquerque, uitgezonderd Harrie Timmer, Bert Vonk en Ate Oosterhof, zij reizen op eigen gelegenheid.

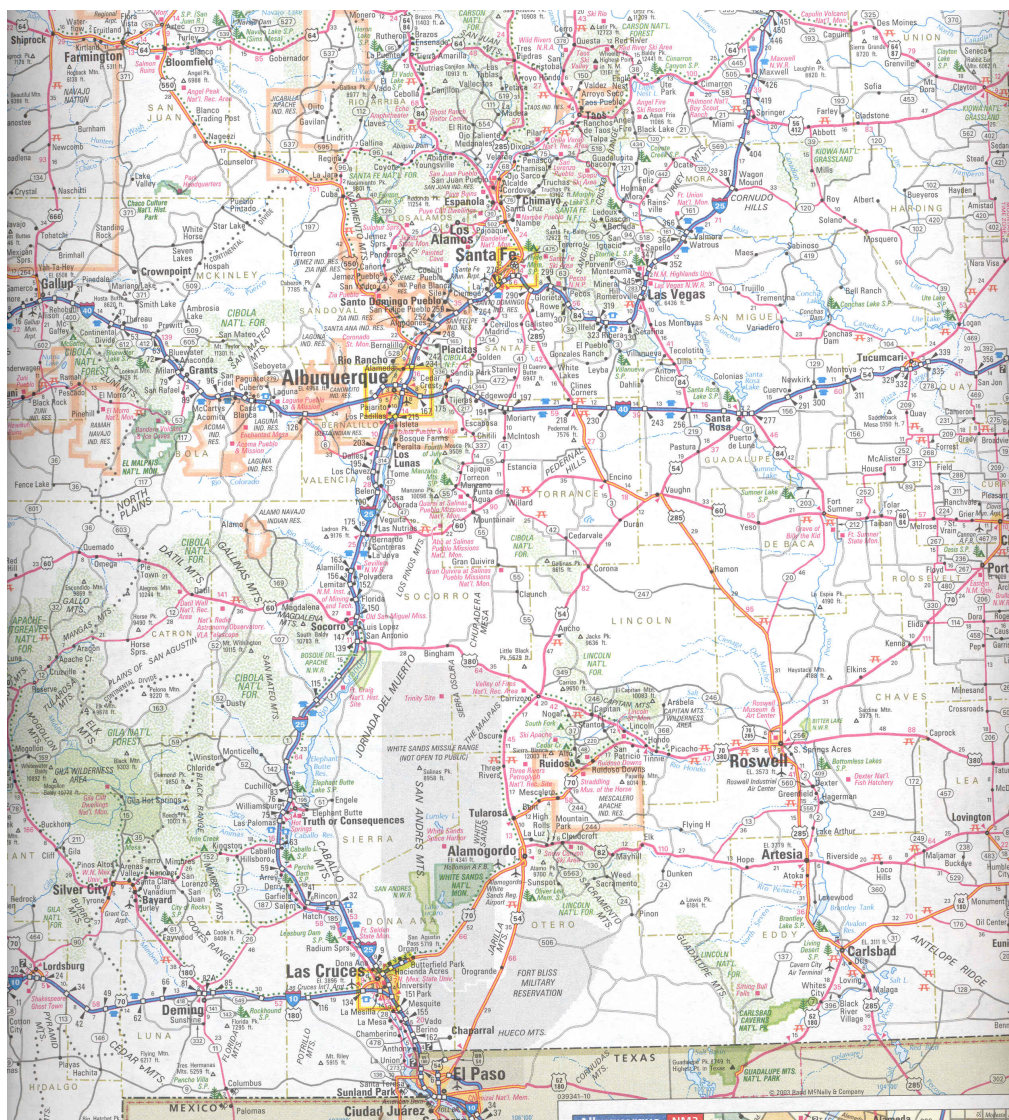
Op 4 mei vliegen Patrick van der Wens, Pieter Dammers en Gertjan Doedens met continental terug naar Amsterdam. Harrie Timmer, Bert Vonk en Ate Oosterhof vliegen op eigen gelegenheid terug.

Rob Lafort, Kees van Beek en Marc Balemans nemen deel aan een workshop op 7 en 8 mei in Fresno, Californië.

Het e-ticket van de vluchtreizen heeft iedere deelnemer persoonlijk ontvangen.

Albuquerque en omgeving

Hieronder een beeld van de omgeving en de stad Albuquerque. In bijlage I en II tref je enige achtergrondinformatie over de staat New Mexico en Albuquerque.



Figuur 1 De staat New Mexico



Figuur 2 De stad Albuquerque

Informatie over het hotel

Doubletree Hotel Albuquerque
 201 Marquette Avenue NW
 Albuquerque, New Mexico, 87102-2248
 Tel. 001 505 247.3344
 Fax 001 505 247.7025



The Doubletree Hotel in Downtown Albuquerque, conveniently accessible to the Albuquerque Convention Center via underground concourse, is five miles from Albuquerque International Sunport Airport.

Ate Oosterhof en Marc Balemans verblijven ieder in een ander hotel.
Hieronder de gegevens voor de medereizigers.

Ate Oosterhof verblijft van 29 april t/m 6 mei in Hilton Albuquerque
1901 University Boulevard NE, Albuquerque, New Mexico, United States 87102-1713
Tel: 00 1-505-884-2500 Fax: 00 1-505-880-1196

Marc Balemans verblijft gedurende 27 april t/m 6 mei op twee verschillende adressen,
namelijk:

27 t/m 29 april
La Quinta Inn Albuquerque Northwest
7439 Pan America Ne, Albuquerque NM, US 87109
tel. 00 1 505-345-7500

29 april t/m 6 mei
Rol & Sarah Dolk
Adobe Nido Bed & Breakfast
1124 Major Ave. NW
Albuquerque, NM USA 87107
phone: 00 1 505-344-1310
toll free 866-435-6436 (alleen in de USA te gebruiken)
fax: 00 1 505-344-2873
E-mail us info@adobenido.com
or - adobenido@comcast.net
Our website: <http://www.adobenido.com>

Informatie voor de thuisblijvers

Tijdens de reis treedt Marc Balemans van Kiwa Water Research op als reisleader. Marc is telefonisch en per e-mail tijdens deze reis te bereiken, en wel als volgt:

✉ marc.balemans@kiwa.nl
☎ +31 6 21 50 78 98

Ben je er van bewust dat er een tijdsverschil is tussen Nederland en Amerika.
Dat tijdsverschil is + 8 uur ten opzichte van Nederland (8.00 uur in Albuquerque is gelijk aan 16.00 uur in Nederland).

In Nederland is Nicolette Vernooij op de hoogte van de reis, de deelnemers en de overnachtingen. Nicolette is bereikbaar op maandag, dinsdag en donderdag de gehele dag en op vrijdagochtend via:

✉ nicolette.vernooij@kiwa.nl
☎ 030 60 69 635

**Neem in noodgevallen altijd telefonisch contact op met:
Marc Balemans, 06 21 50 78 98.**

Praktische informatie voor reis en verblijf

(bron: <http://www.verenigdestatenvanamerika.com/rsinfo/bagage.html> en
http://www.klm.com/travel/nl_nl/about/news_press/travel_news/floatingnews/news6.htm)

In bijlage I is achtergrond informatie opgenomen over de staat New Mexico.
Bijlage II geeft meer informatie over Albuquerque.

Bagage

Voor alle luchtmaatschappijen die naar Noord-Amerika vliegen gelden speciale voorwaarden wat betreft de hoeveelheid bagage die u als reiziger meeneemt. Vluchten naar Noord-Amerika hebben het zogenaamde 2-pieces concept. Dit betekent dat iedere passagier 2 stuks bagage mag inchecken. Het gewicht van deze bagage mag niet hoger zijn dan 23 kilo. Het volume van de koffer (lengte + breedte + hoogte) mag niet meer zijn dan 158 centimeter.

Kinderen van 2 tot 12 jaar die met korting reizen hebben recht op een eigen zitplaats en mogen daarom dezelfde hoeveelheid bagage als een volwassene meenemen. Voor baby's (tot 2 jaar) is deze regeling niet van kracht. Alles wat u nodig heeft voor de verzorging van uw baby mag natuurlijk wel aan boord mee. Neemt u meer dan 64 kilo p.p. mee dan betaald u voor elke kilo meer een extra bedrag.

Handbagage

1 Stuks handbagage is toegestaan in de cabine. Het volume (lengte + breedte + hoogte) hiervan mag niet meer zijn dan 115 cm. Een camera, handtasje, lectuur en / of baby benodigdheden mag u mee aan boord nemen.

Bij de handbagagecontrole gelden de volgende regels voor vloeistoffen, gels en/of spuitbussen:

Vloeistoffen, gels en/of spuitbussen zijn niet toegestaan met uitzondering van één hersluitbare doorzichtige plastic zak van 1 liter die vloeistoffen, gels en/of spuitbussen mag bevatten in verpakkingen van 100 ml of minder per verpakking. De verpakkingen moeten gemakkelijk in de plastic zak passen en de plastic zak moet geheel gesloten/verzegeld zijn en apart van de handbagage van de passagier voor controle worden aangeboden.

U mag de hieronder genoemde artikelen bij u hebben, maar als ze niet zijn verpakt in een hersluitbare doorzichtige plastic zak van 1 liter en/of als de verpakkingen groter zijn dan 100 ml, moet u ze aangeven bij de TSA (Transport Security Administration) bij het controlepunt:

- flesvoeding/melk (inclusief moedermelk) en babyvoeding/sap in verpakkingen, indien een baby of peuter meereist
- medicijnen (vloeistoffen, gels en/of spuitbussen)
- vloeistoffen (inclusief sap) of gels voor passagiers met diabetes of andere medische aandoeningen

Alle overige vloeistoffen, gels en/of spuitbussen moeten in de ingecheckte bagage worden vervoerd.

Let er s.v.p. op dat u uw bagage niet op slot doet wanneer u naar de VS reist. Dit in verband met het checken op explosieven.

Wat gebeurt er met uw bagage als u moet overstappen?

Vaak worden uw koffers doorgelabeld naar de eindbestemming, dit betekent dat u deze pas op de eindbestemming hoeft op te halen. Als u tijdens u overstap uw koffers dient te halen kunt u deze, nadat u door de douane bent geweest, na niet al te lange afstand vaak alweer kwijt om deze vervolgens naar het juiste vliegtuig te transporteren.

Wat mee te nemen? Enkele suggesties

Neem absoluut niet teveel mee op reis, in veel gevallen kunt u de helft van het ingepakte thuislaten. Enkele tips voor onderweg
REISPAPIEREN, GELD enz.

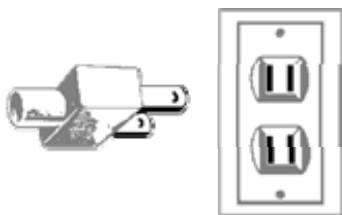
- 0 paspoort (let op geldigheidsdatum)
- 0 (internationaal-) rijbewijs
- 0 reisverzekering bewijs
- 0 vliegtickets
- 0 cash dollars
- 0 alarmnummers van verzekeringsmaatschappijen
- 0 Nederlands geld
- 0 creditcard
- 0 telefoonnummers om betaalpas of creditcard te laten blokkeren
- 0 pen & papier
- 0 (e-mail-) adressen familie, vrienden en reisverzekering
- 0 Bewijs van ziektekosten verzekering

HANDBAGAGE

- 0 vliegtuigkussentje
- 0 medicijnen en eventueel een medicijnenpaspoort
- 0 oordopjes/ooglapje (misschien kun je makkelijker slapen in het donker)
- 0 geparfumeerde zakdoekjes (alcohol doodt bacteriën)
- 0 lippenbalsem
- 0 horloge
- 0 foto & videocamera
- 0 fotorolletjes
- 0 walkman/cd-man/mp3 speler

Elektrische apparatuur

Voor diegene die een telefoon, PDA of laptop meenemen; vergeet niet je adapters mee te nemen. In de USA hebben ze andere stopcontacten, een 'verloopstekker' kan handig zijn.



Het stroomnet in de Verenigde Staten is niet hetzelfde als dat in Nederland. In ons land gebruiken we 220 volt echter in de Verenigde Staten is dat 110 volt. Het is belangrijk te weten of uw elektrische apparaten die u mee wilt nemen naar Amerika, ook bruikbaar zijn op 110 volt.

In de meeste gevallen zal dit wel het geval zijn. Verder dient u er rekening mee te houden dat de stekker van onze elektrische apparatuur niet in de

wandcontactdoos past in Amerika. Een speciale verloopstekker, waarmee u de stekker geschikt maakt voor Amerika, is bij elke goede elektronicazaak te krijgen. Mocht uw apparatuur overigens niet geschikt zijn voor 110 volt dan kunt u bij de betere elektronicazaak ook daarvoor een omvormer kopen.

3 Programma

Ground Water Summit

In onderstaande tabel is het complete programma van de ground water summit 2007 opgenomen.

Sunday, April 29, 2007

8:00 a.m.-5:00 p.m.

[Elements of Vadose Zone Hydrology](#)

[Environmental Aqueous Geochemistry Short Course](#)

[Springs Ecosystems Inventory, Classification, and Monitoring](#)

Monday, April 30, 2007

8:00 a.m.-9:15 a.m.

[Keynote Speaker](#)

9:30 a.m.-10:50 a.m.

[Road Salt Contamination of Ground Water](#)

[Using Water Supply Models to Manage Ground Water Resources](#)

9:30 a.m.-11:30 a.m.

[Arsenic in Ground Water: Characterization and Treatment](#)

9:30 a.m.-3:15 p.m.

[Applications of Geophysics for Ground Water Resources](#)

[Science and Ground Water Policy](#)

10:50 a.m.-11:30 a.m.

[Brackish Water: Identifying Barriers to Beneficial Use](#)

[Ground Water Models for Well Field Optimization](#)

11:30 a.m.-1:30 p.m.

[Lunch \(on you own\)](#)

1:00 p.m.-3:15 p.m.

[New Technologies and Techniques for Ground Water Sampling](#)

[Surface Water and Ground Water Inter Relationships: Technological Approaches](#)

[The Internet as a Data Source for Ground Water Problem Solving](#)

3:15 p.m.-4:15 p.m.

[Darcy Forum](#)

4:30 p.m.-7:30 p.m.

[GIS and Data Tools for Ground Water Investigation](#)

[General Poster Session](#)
[Geologic Mapping for Ground Water Supply and Protection](#)
[Monday Exhibits Open](#)
[Reception and Poster Session](#)

Tuesday, May 1, 2007

8:00 a.m.-9:00 a.m.
[Featured Speaker](#)

9:30 a.m.-1:30 p.m.
[GIS and Data Tools for Ground Water Investigation](#)
[General Poster Session](#)
[Geologic Mapping for Ground Water Supply and Protection](#)
[Tuesday Morning Exhibits Open](#)

10:00 a.m.-3:30 p.m.
[Approaches to Optimizing Well Performance](#)
[Estimation of Recharge to Assess Ground Water Availability](#)
[Ground Water Geochemistry](#)
[The Many Facets of Transboundary Ground Water](#)

10:00 a.m.-11:00 p.m.
[Water Resources Investigations](#)

11:00 a.m.-12:00 p.m.
[Water Supplies in Ecologically Sensitive Areas](#)

12:00 p.m.-1:30 p.m.
[Lunch with the Exhibitors](#)

1:30 p.m.-3:30 p.m.
[Impacts and Sustainability of Inland Ground Water Desalination and Water Reuse](#)

3:45 p.m.-4:45 p.m.
[Birdsall-Dreiss Lecturer](#)

4:30 p.m.-7:30 p.m.
[GIS and Data Tools for Ground Water Investigation](#)
[General Poster Session](#)
[Geologic Mapping for Ground Water Supply and Protection](#)
[Tuesday Afternoon Exhibits Open](#)

Wednesday, May 2, 2007

8:00 a.m.-9:20 a.m.
[Hydrology of Karst and Fractured Aquifer](#)

8:00 a.m.-10:20 a.m.

Aquifers and Aquifer Processes, Characterization and Modeling I

Artificial Recharge and Aquifer Storage and Recovery I

Ground Water in Developing Countries I

8:00 a.m.-10:20 p.m.

Onsite Wastewater Management

9:20 a.m.-10:20 a.m.

Geophysics for Karst and Fractured Rock

10:30 a.m.-11:30 a.m.

Darcy Lecturer

11:30 a.m.-1:00 p.m.

Lunch on you own

11:40 a.m.-1:30 p.m.

Student Mentoring Luncheon (free ticket required)

1:00 p.m.-1:40 p.m.

Sand Petrography as a Tool for Hydrostratigraphic Assessments

1:00 p.m.-4:00 p.m.

Aquifers and Aquifer Processes, Characterization, and Modeling II

Artificial Recharge and Aquifer Storage and Recovery II

Ground Water in Developing Countries II

Ground Water/Surface Water Models

1:40 p.m.-2:20 p.m.

Ground Water and Climate Change

2:40 p.m.-4:00 p.m.

Riverbank Filtration

Thursday, May 3, 2007

8:00 a.m.-5:00 p.m.

Field Trip: Water Resources in the Middle Rio Grande Basin

Ground Water Management in New Mexico: A Challenge of Increasing Demand, Limited Supply, and Statewide Implementation

Het is aan de deelnemers om hun eigen keuze in het programma te maken. De voucher, welke toegang geeft tot het congres en waarmee deelname aan de fieldtrip is vastgelegd is aan de deelnemers persoonlijk overhandigd.

Approaches to Optimizing Well Performance

Het programma voor de sessie over putmanagement is ondergebracht in 'Approaches to Optimizing Well Performance', het programma is hieronder opgenomen.

Tuesday, May 1, 2007: 10:00 a.m.-3:30 p.m.

La Cienega (Albuquerque Convention Center)

Approaches to Optimizing Well Performance

As the demand for water increases and sources of new water become more difficult to obtain due to natural and regulatory constraints, the economic value of existing wells will increase. Optimizing the long-term performance and yield of a well result in an increase in both well value and revenue generated from water production. The key to maintaining peak well production is careful monitoring and regular rehabilitation. This session will highlight new and innovative approaches to maintaining well performance including monitoring strategies, well rehabilitation processes, and well field management processes.

Moderators:

Andreas Wicklein, Pigadi GmbH

Jim Bailey, Kleinfelder Inc.

10:00 a.m.

[Prevention of Mechanical Well Clogging: Increasing the Sustainability of Ground Water Abstraction](#)

Marc L.M. Balemans, MSc.¹, C.G.E.M. van Beek, Msc.¹, Gertjan Doedens², Harrie Timmer, drs.³, Maria Juhász-Holterman⁴ and Carl van Rosmalen⁵, (1)Kiwa Water Research, (2)Vitens, (3)Oasen, (4)Limburg, (5)Brabant Water

10:20 a.m.

[Determination of Effectiveness and Efficient Design of Desanding Tools for Well Development](#)

Peter Nillert, GCI Ingenieurgesellschaft

10:40 a.m.

[Asset Management for Water Wells: Is It All about Money?](#)

Ate Oosterhof, Jenne van der Velde and Richard Nijenhuis, Vitens

11:00 a.m.

[A Comprehensive Approach to Improving the Effectiveness of Well Rehabilitation](#)

Jim Bailey, Kleinfelder Inc.

11:20 a.m.

[Maintaining Optimum Well Performance - City of Berlin, Germany](#)

Andreas Wicklein, Pigadi GmbH

11:40 a.m.

[Optimised Ground Water Level Management through Efficient Well Servicing](#)

Uwe Schmitz Habben, LINEG

12:00 p.m.

Lunch with the Exhibitors

1:30 p.m.

[Injection Well Redevelopment: A Case Study of Various Techniques, Orange County, California](#)

John D. Bonsangue, P.G., Orange County Water District

1:50 p.m.

[Frequently Committed Offenses against the Rules of Water Well Construction](#)

Raeto M. Conrad, M.Sc.Eng., Conrad Consulting

2:10 p.m.

[Maintenance and Monitoring as Tools for Managing Well Field Production](#)

Mike G. Donnelly, ASCT, Regional District of Nanaimo

2:30 p.m.

[Maintaining Production, Dual-Use, and Artificial Recharge Wells in Las Vegas Valley, Nevada](#)

Erin Cole, NGWA, CGWP, Las Vegas Valley Water District and Todd Howard, Layne Christensen Co.

2:50 p.m.

[Patented Solution for Horizontal Directional Drilling of Water Wells](#)

Harrie Timmer, drs., Oasen

3:10 p.m.

[Ground Water Supply Management Issues in British Columbia](#)

Remi Jean Paul Allard, M., Eng., P.Eng., Golder Associates Ltd.

De abstracts van de verschillende lezingen zijn opgenomen in bijlage III.

4 Brengen en halen

Op dinsdag 10 april zijn de deelnemers aan de studiereis bij elkaar gekomen om enkele zaken af te stemmen en hun wensen voor de studiereis kenbaar te maken. Hieronder een korte samenvatting van de inventarisatie van de wensen van de afzonderlijke bedrijven en van Kiwa Water Research als vertegenwoordiger van de bedrijfstak.

Bedrijfstak

De Ground Water Summit 2007 is een congres dat meer dan het onderwerp 'putmanagement' bestrijkt. Voor KWR is het dan ook de bedoeling om meer informatie te verzamelen dan alleen over putmanagement. Interessante topics zijn GIS en grondwatermodellering, ASR, Brak grondwater, grondwatermodellen voor optimalisatie van puttenvelden, nieuwe technieken voor bemonstering van grondwater.

KWR wil tijdens het congres de kennis en expertise van de Nederlandse drinkwatersector op het brede vlak, en putmanagement in het bijzonder, internationaal onder de aandacht brengen. Daarnaast willen we ons op de hoogte stellen van ontwikkelingen op het genoemde vlak. Daarmee aansturend op het brengen *en* halen van informatie ten behoeve van het onderzoek zoals dat door de waterbedrijven binnen het BTO wordt uitgevoerd.

Opbrengsten:

- Artikel in H₂O over het congres, de opbrengsten en nieuwe internationale ontwikkelingen
- Stukje over het congres in BTO Nieuws Online
- Overzicht van belangrijke topics en de internationale ontwikkelingen, met de nadruk op putmanagement
- Verkennen van samenwerkingsmogelijkheden op het gebied van putmanagement.

Kiwa WR bekijkt of er een mogelijkheid is om een bezoek te brengen aan het locale waterbedrijf.

De afzonderlijke bedrijven

Zowel Vitens als Oasen presenteren hun kennis en aanpak op het gebied van Asset management en HDD-wells.

DZH (Pieter Dammers) staat aan de vooravond van een grootschalige renovatie van de puttenvelden in de duinen. Tijdens de studiereis is het de bedoeling om informatie te krijgen over recente ontwikkelingen die bij kunnen dragen.

Evides (Rob Lafort) wil zich tijdens deze studiereis op de hoogte stellen van regeneratietechnieken. De laatste jaren is Evides geconfronteerd met ernstig verstoppende puttenvelden. Dit heeft geleid tot hernieuwde aandacht voor

putten en regeneratiemethoden. Het is zeker de bedoeling om actief met congresdeelnemers van gedachte te wisselen over mogelijkheden.

Brabant Water (Patrick van der Wens) zet in op nieuwe technieken voor haar puttenvelden om de verstopping te verminderen en kosten te reduceren. Onder andere is een traject ingezet om te komen tot de aanleg van een HDD-well en verkenning van de mogelijkheden van ASR. Deze keuzes moeten strategisch nog afgewogen worden. Doel van de studiereis is voor Brabant Water om kennis te vergaren op deze vlakken.

Voor alle deelnemers geldt dat de studiereis ook bijdraagt aan onderlinge kennisuitwisseling, o.a. op het gebied van putten.

De medewerkers van DZH en Evides is gevraagd om hun ervaringen binnen het bedrijf te delen met behulp van een presentatie voor collegae en/of management.

Vitens zal de resultaten presenteren aan de interne projectgroep putten.

I Informatie over New Mexico

(bron: <http://www.verenigdestatenvanamerika.com/sta-ste/staten/New%20Mexico.shtml>)

New Mexico



Staatsleus New Mexico: The Land of Enchantment

Lid van de unie sinds: 6 januari 1912

De staat New Mexico grenst in het noorden aan de staat Colorado, in het oosten aan de staten Oklahoma en Texas, in het zuiden aan de staat Texas en Mexico en in het westen aan de staat Arizona. De totale oppervlakte van de staat is 315.115 vierkante kilometer. De staat heeft ongeveer 1,5 miljoen inwoners. Van noord naar zuid is de afstand 629 km en van oost naar west 553 km. De hoofdstad is Santa Fe met 375.000 inwoners. De staat bestaat uit hoofdzakelijk bergachtig gebied. Het zuidelijke uiteinde van de Rocky Mountains ligt namelijk op het grondgebied van New Mexico. De staat wordt door de Rio Grande River feitelijk in tweeën gedeeld. Het hoogste punt van de staat is Wheeler Peak met een hoogte van 4011 meter en het laagste punt is Red Bluff Reservoir met 859 meters boven de zeespiegel. Door deze zeer gevarieerde en verschillende hoogten is er een duidelijk onderscheid te maken in de vegetatie. De koele berghellingen zijn voornamelijk met naaldbomen bedekt maar in het zuiden van de staat vormen cactussen de belangrijkste vegetatie. Het oostelijk deel van de staat maakt deel uit van de Great Plains met uitgestrekte vlakten, diepe canyon's, bergen en mesa's (tafelbergen). Tot de belangrijke rivieren in dit deel behoren de Pecos en Canadian River. Deze rivieren voeden ook nog eens verschillende stuwmeren. Naar het noorden toe lopen de Great Plains langzaam maar zeker over in de Rocky Mountains. In deze overloop bevindt zich ook Wheeler Peak. De Rocky Mountains zijn de voornaamste bergketen in het westen van het Noordamerikaanse land. De Rockies lopen van Noordwest Alaska over een lengte van 4800 km naar het hart van New Mexico. Dit gebergte vormt o.a. de zogeheten Continental Divide. Met andere woorden de continentale scheiding tussen rivieren die aan de ene kant naar de Atlantische oceaan en aan de andere zijde naar de Grote Oceaan stromen.

In het noordwesten van New Mexico ligt het Colorado Plateau. Dit is een hoogvlakte met diverse mesa's, zandsteenformaties, hoge klippen, canyons en dalen. Een groot deel van het zuiden van de staat maakt deel uit van de Basin

and Range Region. Smalle bergketens en brede woestijnvlakten zijn hier het decor. Het zuiden van New Mexico behoort tot de allerdroogste gebieden van heel Noord-Amerika. De rivier Rio Grande is de grootste en langste van New Mexico. Hij ontstaat in Colorado en loopt door het hart van New Mexico langs de stad Albuquerque. Vandaar stroomt hij in zuidwestelijke richting om de natuurlijke grens te vormen tussen de staat Texas en Mexico. Bij Brownsville (Texas) en Matamoros (Mexico) stort de Rio Grande in de Golf van Mexico.

Aangenomen wordt dat vier Spanjaarden, onder aanvoering van Cabeza de Vaca, in 1536 de eerste blanken in dit gebied waren. Aanleiding van hun bezoek aan dit gebied waren de verhalen die zij hadden gehoord in Mexico over een aantal rijke steden in het noorden. Deze stonden bekend als de zogenaamde zeven gouden steden van Cibola. Deze verhalen zorgden voor een expeditie, de Coronado-expeditie, die vanuit Mexico op zoek ging naar de zeven steden. De steden werden niet gevonden. Ze vonden wel dorpen van de Zuni-Indianen, echter deze waren niet van goud. De allereerste nederzetting werd in 1598 gesticht door de Spanjaarden bij San Juan. Rond 1610 werd Pedro de Peralta gouverneur van New Mexico en hij stichtte de hoofdstad Santa Fe. Bij de bouw van Santa Fe werden de Indianen gedwongen mee te werken. Uiteindelijk resulteerde deze dwang in de Indianen-opstand in 1680. De zogenaamde Pueblo-opstand zorgde voor de vernietiging van vrijwel alle Spaanse nederzettingen. Pas twee jaar later konden de Spanjaarden het gebied opnieuw in handen nemen. In het begin van de 19de eeuw werd New Mexico een provincie van het pas onafhankelijke Mexico. In 1846 brak de Mexicaanse oorlog uit, die een conflict was tussen Mexico en de Verenigde Staten. De winst voor de Verenigde Staten was al vlug een feit en na een korte tijd van oorlogvoering konden de Verenigde Staten zichzelf de heerser van New Mexico noemen. In 1912 trad New Mexico toe tot de Verenigde Staten als zevenenveertigste staat.

Tijdens de Tweede Wereldoorlog werden de woestijnen van New Mexico belangrijke gebieden voor onderzoek en ontwikkeling van nieuwe wapens. Het zogenaamde Manhattan project, dat uiteindelijk de ontwikkeling van de atoombom verzorgde, zorgde voor de bouw van geheime laboratoria waar vooraanstaande geleerden gingen werken. Op het proefterrein van de White Sands werd de eerste atoombom met succes getest.

De vlag van New Mexico



<u>Extra informatie</u>		
Staatsbloem	Yucca	
Staatsboom	Pinon	
Staatsvogel	Roadrunner	
Staatsinsect	Tarantula hawk wasp	
<u>Facts</u>	Statistieken zijn verwerkt tot 2001	
<u>Populatie feiten</u>	<u>New Mexico</u>	<u>USA</u>
Populatie	1,829,146	284,796,887
Mannelijke populatie	49.2%	49.1%
Vrouwelijke populatie	50.8%	50.9%
Populatie onder de 18 jaar	28.0%	25.7%
Populatie 65 jaar en ouder	11.7%	12.4%
Blanke bevolking	66.8%	75.1%
Zwarte bevolking	1.9%	12.3%
Amerikaans Indiaans, Eskimo, Aleut pop.	9.5%	0.9%
Aziaten	1.1%	3.6%
Spaanse of Latino populatie	42.1%	12.5%
Blanke niet-Spaanse populatie	44.7%	69.1%
High school geslaagden, personen 25 jaar en ouder	78.9%	80.4%
College geslaagden, personen 25 jaar en ouder	23.5%	24.4%
Eigen huis bezitters	70.0%	66.2%
Eengezinswoningen	780,579	115,904,641
Huishoudens	677,971	105,480,101
Aantal personen per huishouden	2.63	2.59
Gemiddeld inkomen per huishouden	\$34,133	\$41,994
Aantal personen onder minimum inkomen	18.4%	12.4%
<u>Zakelijke feiten</u>	<u>New Mexico</u>	<u>USA</u>
Prive bedrijven	42,918	7,008,444
Prive werkgelegenheid	541,386	110,705,661
Minderheden die een eigen bedrijf hebben	28.5%	14.6%
Vrouwen met eigen bedrijf	29.4%	26.0%

Federale fondsen en kredieten (in eenheden van \$1000,-)	16,586,876	1,763,896,019
Overheidsbanen - full-time	69,941	10,227,429
<u>Geografische Feiten</u>	<u>New Mexico</u>	<u>USA</u>
Land oppervlakte (in vierkante Mijlen)	121,356	3,537,438
Personen per vierkante mijl	15.0	79,6



II Informatie over Albuquerque

(Bron: http://en.wikipedia.org/wiki/Albuquerque,_New_Mexico)

From Wikipedia, the free encyclopedia

Albuquerque, New Mexico



Nickname: *The Duke City*



Location in the state of [New Mexico](#)

Coordinates: [35°06'39"N, 106°36'36"W](#)

Country

[United States](#)

State

[New Mexico](#)

County

[Bernalillo](#)

Founded

1706

Government

- Mayor

[Martin Chavez](#)

Area

- City 181.3 [sq mi](#) (469.5 [km²](#))
- Land 180.6 sq mi (467.9 km²)
- Water 0.6 sq mi (1.7 km²)

Elevation 5,312 [ft](#) (1,619.1 [m](#))

Population (2005)

- City 494,236
- Density 2,483.4/sq mi (958.9/km²)
- Urban 693,000
- Metro 797,940

Time zone [MST](#) ([UTC-7](#))

- Summer ([DST](#)) [MDT](#) ([UTC-6](#))

Website: <http://www.cabq.gov/>

Albuquerque ([pronounced](#) [[æ](#)l.bə.kə .ki :], [Spanish](#): [[al.βu.ˈker .ke](#)]); known as *Bee'eldííldahsinil* in [Navajo](#)) is the largest [city](#) in the [state](#) of [New Mexico](#), [United States](#). It is the [county seat](#) of [Bernalillo County](#) and is situated in the central part of the state, straddling the [Rio Grande](#). The city population was 448,607 as of the 2000 [U.S. census](#). As of the 2005 census estimate, the city's population was 494,236, with a metropolitan population of 816,811 as of July 1, 2006. In 2006, Albuquerque ranked as the [33rd-largest](#) city and [61st-largest](#) metropolitan area in the U.S. The [Albuquerque MSA](#) population includes the [city](#) of [Rio Rancho](#), one of the fastest growing cities in the United States, a hub for many master-planned communities which are expected to draw future businesses and residents to the area. Albuquerque is home to the [University of New Mexico](#) (UNM) and [Kirtland Air Force Base](#) as well as [Sandia National Laboratories](#) and [Petroglyph National Monument](#). The [Sandia Mountains](#) run along the eastern side of Albuquerque and the [Rio Grande](#) flows through the city north to south.

Contents

- [1 History](#)
 - [1.1 Early settlers](#)
 - [1.2 Early 20th century](#)
 - [1.3 Decades of growth](#)
 - [1.4 New millennium](#)
- [2 Geography](#)
 - [2.1 Climate](#)
 - [2.2 Geology](#)
 - [2.3 Cityscape](#)
 - [2.3.1 Northeast Quadrant](#)
 - [2.3.2 Northwest Quadrant](#)
 - [2.3.3 Southeast Quadrant](#)
 - [2.3.4 Southwest Quadrant](#)
- [3 Government and politics](#)
- [4 Economy](#)
- [5 Urban trends and issues](#)
- [6 Architecture](#)
- [7 Culture](#)
 - [7.1 Arts and theatre](#)
 - [7.2 Tourism and recreation](#)
 - [7.3 Sports](#)
 - [7.4 Media](#)
- [8 Demographics](#)
- [9 Educational institutions](#)
- [10 Transportation](#)
 - [10.1 Highways](#)
 - [10.2 Mass transit](#)
 - [10.3 Rail](#)
 - [10.4 Airports](#)

History

Early settlers



Depiction of Central Avenue, circa early 20th century

The city was founded in 1706 as the [Spanish](#) colonial outpost of *Albuquerque*; present-day Albuquerque retains much of the Spanish cultural and historical heritage.

Albuquerque was a farming community and strategically located military outpost along the [Camino Real](#). The town of Albuquerque was built in the traditional Spanish village pattern: a central plaza surrounded by government buildings, homes, and a church. This central plaza area has been preserved and is open to the public as a museum, cultural area, and center of commerce. It is referred to as "Old Town Albuquerque" or simply "Old Town."

The village was named by the provincial governor Don Francisco Cuervo y Valdes in honour of Don [Francisco Fernández de la Cueva, Duke of Albuquerque](#), viceroy of [New Spain](#) from [1653](#) to [1660](#). The first "r" in "Albuquerque" was dropped at some point in the [19th century](#), supposedly by an [Anglo-American](#) railroad station-master unable to correctly pronounce the city's name. Some New Mexicans still prefer the spelling *Alburquerque*; see for example the book by that name by [Rudolfo Anaya](#). In the 1990s, the Central Avenue Trolley Buses were emblazoned with the name *Alburquerque* (with the extra "r") in honor of the city's historic name.

During the [Civil War](#) Albuquerque was occupied in February [1862](#) by [Confederate](#) troops under General [Henry Hopkins Sibley](#), who soon afterwards advanced with his main body into northern New Mexico. During his retreat from [Union](#) troops into [Texas](#) he made a stand on [April 8, 1862](#) at Albuquerque. A day-long engagement at long range led to few casualties against a detachment of Union soldiers commanded by Colonel [Edward R. S. Canby](#).

When the [Atchison, Topeka and Santa Fe Railroad](#) arrived in [1880](#), it bypassed the Plaza, locating the passenger depot and railyards about 2 miles (3 km) east in what quickly became known as New Albuquerque or New Town. Old Town remained a separate community until the 1920s when it was absorbed by the City of Albuquerque, which had been incorporated in [1891](#). [Albuquerque High School](#), the city's first public high school, was established in 1879.

Early 20th century

New Albuquerque quickly became a tidy southwestern town which by [1900](#) boasted a population of 8,000 inhabitants and all the modern amenities including an electric street railway connecting Old Town, New Town, and the recently established [UNM](#) campus on the East Mesa. In [1902](#) the famous Alvarado Hotel was built adjacent to the new passenger depot and remained

a symbol of the city until it was torn down in 1970 to make room for a parking lot. In 2002, the [Alvarado Transportation Center](#) was built on the site in a manner resembling the old landmark. The large metro station functions as the downtown headquarters for the city's transit department, and serves as an intermodal hub for local buses, [Greyhound](#) buses, Amtrak passenger trains, and the [Rail Runner](#) commuter rail line.

New Mexico's dry climate brought many [tuberculosis](#) patients to the city in search of a cure during the early [1900s](#), and several sanatoria sprang up on the West Mesa to serve them. Presbyterian Hospital and St. Joseph Hospital, two of the largest hospitals in the Southwest, had their beginnings during this period. Influential [New Deal](#)-era governor [Clyde Tingley](#) and famed southwestern architect [John Gaw Meem](#) were among those brought to New Mexico by tuberculosis.

Decades of growth

The first travelers on [Route 66](#) appeared in Albuquerque in [1926](#), and before long dozens of motels, restaurants, and gift shops had sprung up along the roadside to serve them. Route 66 originally ran through the city on a north-south alignment along Fourth Street, but in [1937](#) it was realigned along Central Avenue, a more direct east-west route. The intersection of Fourth and Central downtown was the principal crossroads of the city for decades. The majority of the surviving structures from the Route 66 era are on Central, though there are also some on Fourth. Signs between [Bernalillo](#) and [Los Lunas](#) along the old route now have brown, historical highway markers denoting it as *Pre-1937 Route 66*.

The establishment of [Kirtland Air Force Base](#) in [1939](#), Sandia Base in the early 1940s, and [Sandia National Laboratories](#) in [1949](#), would make Albuquerque a key player of the Atomic Age. Meanwhile, the city continued to expand outward onto the West Mesa, reaching a population of 200,000 by [1960](#). As Albuquerque spread outward, the downtown area fell into a decline. Many historic buildings were razed in the [1960s](#) and [1970s](#) to make way for new plazas, high-rises, and parking lots as part of the city's urban renewal project. Only recently has downtown come to regain much of its urban character, mainly through the construction of many new loft apartment buildings and the renovation of historic structures like the [KiMo Theater](#).

New millennium

During the 21st century, the Albuquerque population has continued to grow rapidly. The population of the city proper is estimated at 494,236 in 2005, up from 448,607 in the 2000 census, and is projected to reach 540,279 in 2010. Also, the metropolitan area population is estimated at 799,260 in 2006, up from 712,738 in the 2000 census, and is projected to reach 883,295 in 2010, and surpass 1 million by 2020.

During 2005 and 2006, the city celebrated its tricentennial with a diverse program of cultural events.

Geography



Satellite Image of Albuquerque, New Mexico Courtesy of NASA

According to the [United States Census Bureau](#), Albuquerque has a total area of 181.3 square miles (469.6 km²). 180.6 square miles (467.8 km²) of it is land and 0.6 square miles (1.6 km²) of it (0.35%) is water. The metro area has over 1,000 square miles developed.

Albuquerque lies within the northern, upper edges of the [Chihuahuan Desert](#) ecoregion, based on long-term patterns of climate, associations of plants and wildlife, and landforms, including drainage patterns. Located in central New Mexico, the city also has noticeable influences from the adjacent Colorado Plateau Semi-Desert, Arizona-New Mexico Mountains, and Southwest Plateaus and Plains Steppe ecoregions, depending on where one is located. Its main geographic connection lies with southern New Mexico, while culturally, Albuquerque is a crossroads of most of New Mexico.

Albuquerque has one of the highest elevations of any major city in the United States, though the effects of this are greatly tempered by its southwesterly continental position. The elevation of the city ranges from 4,900 feet (1,490 m) above sea level near the Rio Grande (in the Valley) to over 6,400 feet (1,950 m) in the foothill areas of the Northeast Heights. At the airport, the elevation is 5,352 feet (1,631 m) above sea level.

The Rio Grande is classified, like the [Nile](#), as an 'exotic' river because it flows through a desert. The New Mexico portion of the Rio Grande lies within the [Rio Grande Rift](#) Valley, bordered by a system of [faults](#), including those that lifted up the adjacent Sandia and [Manzano Mountains](#), while lowering the area where the life-sustaining Rio Grande now flows.

Albuquerque is located at [35°6'39"N, 106°36'36"W](#) (35.110703, -106.609991).[GRI](#)

Climate

Albuquerque's climate is usually sunny and dry, with low relative humidity. Brilliant sunshine defines the region, averaging more than 300 days a year; periods of variably mid and high-level cloudiness temper the sun at other times. Extended cloudiness is rare. The city has four distinct seasons, but the heat and cold are mild compared to the extremes that occur more commonly in other parts of the country.

Winters are rather brief but definite; daytime highs range from the mid 40s to upper 50s [Fahrenheit](#), while the overnight lows drop into the low 20s to near 30 by sunrise; nights are often colder in the valley and uppermost foothills by several degrees. The occasional snowfall, associated with low pressure areas, fronts and troughs, often melts by the mid-afternoon; over half of the scant winter moisture occurs in the form of light rain showers, usually brief in duration. In the much higher and colder Sandia Mountains, moisture falls as snow; many years have enough snow to create decent skiing conditions at the local ski area.

Springtime starts off windy and cool, sometimes unsettled with some rain and even light snow, though spring is usually the driest part of the year in Albuquerque. March and April tend to see many days with the wind blowing at 20 to 30 mph, and afternoon gusts can produce periods of blowing sand and dust. In May, the winds tend to subside, as temperatures start to feel like summer.

Summer daytime highs range from the upper 80s to the upper 90's, while dropping into the low 60s to low 70s overnight; the valley and uppermost foothills are often several degrees cooler than that. The heat is quite tolerable because of low humidity, except during the late summer during increased humidity from surges in the monsoonal pattern; at that time, daytime highs drop slightly but the extra moisture in air can cause nighttime temperatures increase.

Fall sees mild days and cool nights with less rain, though the weather can be more unsettled closer to winter.

Year round, the low temperatures tend to be approximately five degrees warmer than those of nearby cities and towns such as Rio Rancho, Corrales, Bernalillo, Los Lunas, and Belen.

The city was one of several in the region experiencing a severe winter storm leaving between 10 and 26 inches of snow in just over 24 hours on December 30, 2006.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg high °F	48	55	62	71	80	90	92	89	82	71	57	48
Avg high °C	9	13	17	22	27	32	33	32	28	22	14	9
Avg low °F	24	28	34	41	50	59	65	63	56	44	32	24
Avg low °C	-4	-2	1	5	10	15	18	17	13	7	0	-4
Rainfall inches	.49	.44	.61	.50	.60	.65	1.27	1.73	1.07	1.00	.62	.49
Rainfall mm	12.4	11.2	15.5	12.7	15.2	16.5	32.3	43.9	27.2	25.4	15.7	12.4

Albuquerque's climate is classified as [arid](#) (BWk or BWb, depending on the particular scheme of the [Köppen climate classification](#) system one uses), meaning average annual precipitation is less than half of evaporation, and the mean temperature of the coldest month is above freezing (32°F). Only the wettest areas of the Sandia foothills are barely [semi-arid](#), where precipitation is more than half of, but still less than, evaporation; such areas are localized and usually lie above 6000 feet in elevation and often in arroyo drainages, signified by a slightly denser, taller growth of evergreen oak - juniper - pinon chaparral and rarely, woodland, often mixed with taller desert grasses. These elevated foothill areas still border arid areas, best described as desert grassland or desert shrub, on their west sides.

Traveling to the west, north and east of Albuquerque, one quickly rises in elevation and leaves the sheltering effect of the valley to enter a noticeably cooler and slightly wetter environment. One such area is still considered part of metro Albuquerque, commonly called the "East Mountain" area; it is covered in savannas or woodlands of low juniper and pinon trees, reminiscent of the lower parts of the southern Rocky Mountains, which do not actually contact Albuquerque proper.

Those mountains and highlands beyond the city create a "rain shadow" effect, due to the drying of descending air movements; the city usually receives very little rain or snow, averaging 8-9 inches (216 mm) of precipitation per year. Valley and west mesa areas, farther from the mountains are drier, averaging 6-8 inches of annual precipitation; the Sandia foothills tend to lift any available moisture, enhancing precipitation to about 10-17 inches annually. Most precipitation occurs during the summer monsoon season (also called a [chubasco](#) in Mexico), typically starting in early July and ending in mid-September.

Geology

The [Sandia Mountains](#) are the predominant geographic feature visible in Albuquerque. "Sandía" is [Spanish](#) for "[watermelon](#)", and is popularly believed to be a reference to the brilliant coloration of the mountains at sunset: bright pink (melon meat) and green (melon rind). The pink is due to large exposures of [granodiorite cliffs](#), and the green is due to large swaths of [conifer](#) forests.

However, Robert Julyan notes in *The Place Names of New Mexico*, "the most likely explanation is the one believed by the Sandia Indians: the Spaniards, when they encountered the Pueblo in 1540, called it Sandia, because they thought the squash growing there were watermelons, and the name Sandia soon was transferred to the mountains east of the pueblo."^[2] He also notes that the Sandia Pueblo Indians call the mountain *Bien Mur*, "big mountain."^[2]

The Sandia foothills, on the west side of the mountains, have soils derived from that same rock material with varying sizes of decomposed granite, mixed with areas of clay and [caliche](#) (a calcereous clay common in the arid southwestern USA), along with some exposed [granite](#) bedrock.

Below the foothills, the area usually called the "Heights" consists of a mix of clay and [caliche](#) soils, overlain by a layer of decomposed granite, resulting from long-term outwash of that material from the adjacent mountains. This [bajada](#) is quite noticeable when driving into the Duke City from the north or south, due to its fairly uniform slope from the mountains' edge downhill to the valley. Sand hills are scattered along the I-25 corridor and directly above the Rio Grande valley, forming the lower end of the Heights.

The Rio Grande valley, due to long-term shifting of the actual river channel, contains layers and areas of soils varying between [caliche](#), clay, loam, and even some sand. It is the only part of Albuquerque where the [water table](#) often lies close to the surface, sometimes less than 10 feet.

The last significant area of Albuquerque geologically is the "West Mesa": this is the elevated land west of the Rio Grande, including the sandy terrace immediately west and above the river, and the rather sharply defined volcanic escarpment above and west of most of the developed city. The west

mesa commonly has soils often referred to as "blow sand", along with occasional clay and caliche and even basalt, nearing the escarpment.

Cityscape



The Pueblo Deco style KiMo Theater is one of Albuquerque's best-known landmarks.

Albuquerque has expanded greatly in area since the mid 1940s. During those years of expansion, the planning of the newer areas has considered that people don't walk, they drive. The pre-1940s parts of Albuquerque are quite different in style and scale from the post 1940s areas. These older areas include the North Valley, the South Valley, various neighborhoods near downtown, and Corrales. The newer areas generally feature 4- to 6-lane roads in a 1 mile (1.61 km) grid. Each 1 square mile (2.59 km²) is divided into four 160-acre neighborhoods by smaller roads set 0.5 miles (0.8 km) between major roads. When driving along major roads in the newer sections of Albuquerque, one sees strip malls, signs, and cinderblock walls. The upside of this planning style is that neighborhoods are shielded from the worst of the noise and lights on the major roads. The downside is that it is virtually impossible to go anywhere from home without driving.

Albuquerque is geographically divided into four [quadrants](#) which are officially part of the mailing address. They are **NE** (northeast), **NW** (northwest), **SE** (southeast), and **SW** (southwest). The north-south dividing line is Central Avenue (the path that [Route 66](#) took through the city) and the east-west dividing line is the [BNSF Railway](#) tracks. Although this is technically the division of the city, in casual conversation Albuquerqueans sometimes use the perpendicular interstates I-25 and I-40 to divide the city into quadrants.

Northeast Quadrant

This quadrant has been experiencing a housing expansion since the late 1950s. It abuts the base of the Sandia Mountains and contains portions of the Sandia Heights neighborhoods, which are situated in or near the foothills and are significantly higher, in elevation and price range, than the rest of the city.

Running from Central Ave. and the railroad tracks to the [Sandia Peak Aerial Tram](#), this is the largest quadrant both geographically and by population. The [University of New Mexico](#), the Maxwell Museum of Anthropology, the Uptown area which includes both Coronado and Winrock malls, Journal Center (with over 2 million square feet of office space), Balloon Fiesta Park, and [Albuquerque Academy](#) are all located in this quadrant. Some of the most affluent regions of the city are located here, including Las Lomas-Roma, Netherwood Park, Academy Hills, Tanoan West & East, High Desert, Glenwood Hills, Sandia Heights, North Albuquerque Acres, and Tierra Monte. (Sandia Heights, Tierra Monte, and some of North Albuquerque Acres are outside the city limits proper.) A few houses in the farthest reach of this quadrant lie in the [Cibola National Forest](#), just over the line into [Sandoval County](#).

Northwest Quadrant

This quadrant contains historic [Old Town Albuquerque](#), which dates back to the [1700s](#), as well as the Indian Pueblo Cultural Center. The area has a mixture of commercial, low-income, middle-income, and some of the most expensive homes in the city. Northwest Albuquerque includes the largest section of [downtown](#), the Rio Grande Nature Center State Park and the [Bosque](#) ("woodlands" Cottonwood forest), the [Petroglyph National Monument](#), [Double Eagle II Airport](#), the historic Martineztown neighborhood, and Cottonwood Mall. Additionally, the "North Valley" area, which includes some small ranches and expensive residential homes along the [Rio Grande](#), is located in this quadrant. The City of Albuquerque engulfs the village of [Los Ranchos de Albuquerque](#) and borders [Corrales](#) in the northwest valley. The rapidly-developing area on the west side of the river is known as the "west side" and consists primarily of traditional residential subdivisions. Here the city proper is bordered on the north by the [City of Rio Rancho](#).

Southeast Quadrant

[Eclipse Aviation](#), [Kirtland Air Force Base](#), [Sandia National Laboratories](#), the [University of New Mexico](#), the [Central New Mexico Community College](#) main campus, the [Albuquerque International Sunport](#), [University Stadium](#), [Isotopes Park](#), and [University Arena](#) ("The Pit") are located in the Southeast (SE) quadrant.

The Nob Hill and East Downtown (EDo) neighborhoods lie along Central Avenue, the border between the Southeast and Northeast quadrants. The expensive residential developments of Four Hills, Willow Wood, and Ridgecrest are also located in this quadrant. In sharp contrast to these upscale developments, however, some of the most poverty-stricken neighborhoods in the city are also located in Southeast Albuquerque. During the past twenty years, the SE area, mainly around Gibson Blvd. and Central Ave., has become the highest crime area in the city. However, recent developments in the neighborhood such as the Cesar Chavez Community Center, Veterans Memorial, and the World Market have shown that this area is in the beginning stages of reestablishing itself as one of many cultural centers in the city.

Southwest Quadrant

Traditionally consisting of agricultural and rural areas, the Southwest quadrant is often referred to as the "South Valley". Although the city limits of Albuquerque do not include all of the area, the South Valley is considered to extend all the way to the [Isleta Indian Reservation](#). This includes the old communities of Kinney, Mountainview, and Pajarito. The south end of downtown Albuquerque and the [Bosque](#) ("woodlands" cottonwood forest), the historic [Barelas](#) neighborhood, the National Hispanic Cultural Center, the [Rio Grande Zoo](#), and [Tingley Beach](#) are also located here.

The southwest area is currently undergoing rapid and controversial development, including large retail stores and quickly-built subdivisions.

Government and politics

Main article: [Politics of Albuquerque](#)



The courthouse as seen from Lomas Blvd.

In the summer of 2005, [ACORN](#) community groups placed a [minimum wage](#) initiative on the October 4 ballot. The initiative would have created a city wide minimum wage of \$7.50. The measure was defeated by less than one percent. In April of 2006, the Albuquerque City Council and Mayor Martin Chavez worked together to enact a minimum wage ordinance. Under this ordinance, the minimum wage will increase to \$6.75 on January 13, 2007 and will eventually be raised to \$7.50 by 2009.

Economy

Albuquerque lies at the center of the New Mexico Technology Corridor, a band of high-tech private companies and government institutions along the Rio Grande. Larger institutions whose employees contribute to the population are numerous and include [Sandia National Laboratories](#), [Kirtland Air Force Base](#), and the attendant contracting companies which bring highly educated workers to a somewhat isolated region. [Intel](#) operates a large semiconductor factory or "[fab](#)" just outside the city boundaries of neighboring [Rio Rancho, New Mexico](#), in [Sandoval County, New Mexico](#), with its attendant large-capital investment.

The [solar energy](#) and architectural-design innovator [Steve Baer](#) located his company, Zomeworks, here in the late [1960s](#).

In the 1970's New Mexico becomes considered one of the "great towns to live in" causing many from the north to move south. Home building has great success along with fencing. Through this time Scott's Fencing Co. became one of the quickest growing fencing companies in the nation.

In March 2007 [Tesla Motors](#) announced that an electric car assembly plant will be going up on Albuquerque's Westside. [Los Alamos National Laboratory](#), [Sandia](#), and [Lawrence Livermore National Laboratory](#) cooperate in an enterprise that began with the [Manhattan Project](#).

Urban trends and issues

Recently, government leaders and many citizens in the city have actively pursued urban projects taken on by cities many times larger. A huge push has resulted in the somewhat successful revitalization of downtown, creating restaurants, offices, and residential lofts. The strip of Central Avenue between First and Eighth streets has become a hub of urban life, with a big-city feel. Alvarado provides convenient access to other parts of the city via [ABQ RIDE](#) the city bus system. The mayor wants to tackle a rapid transit project to ease some of the city's traffic woes. A street car is being considered and would initially extend up the Central Avenue corridor from the westside, through downtown, past UNM and the Nob Hill district, and into the Uptown Area [\[1\]](#).

A few citizens and city councilors fear Albuquerque may be "growing too quickly." They want to avoid increasing crime and traffic, worsening air quality, stressing water supplies, and encroaching on the natural environment. For instance, 1995's controversial construction of the Montañño Bridge crossing at the Rio Grande resulted in the bridge only being striped for two lanes. After a grace period, the Greater Albuquerque Chamber of Commerce passed a board position in 2003 supporting the opening of two additional lanes; these lanes were eventually opened in March 2006, despite the outcry of local residents. However, a significant majority of Albuquerque residents supported the opening of the four lanes, as well as the initial construction of the bridge in 1995.[\[2\]](#).

The passage of the West Side Strategic Plan provides rules concerning building permits for the extreme western fringes of the city. [\[3\]](#). This act encourages in-filling developments and discourages the movement of wealthy residents to outlying suburban areas. Urban sprawl is limited by the [Pueblo](#) of Sandia to the north, the Pueblo of Isleta and [Kirtland Air Force Base](#) to the south, the [Sandia Mountains](#) to the east and Petroglyph National Monument to the west. These limitations facilitate reuse of land within the existing city limits and have forced more efficient use of available land around the edges as well.

Because of cheaper land and lower taxes, much of the growth in the metropolitan area is taking place outside of the City of Albuquerque itself. In Rio Rancho to the northwest, the communities east of the mountains, and the incorporated parts of [Valencia County](#) population growth rates approach twice that of the city. The primary cities in Valencia County are [Los Lunas](#) and [Belen](#), both of which are home to growing industrial complexes and new residential subdivisions. The [Mid Region Council of Governments](#) (MRCOG), which includes constituents from throughout the Albuquerque area, was formed to insure that these governments along the middle Rio Grande would be able to meet the needs of their rapidly rising populations. MRCOG's cornerstone project is the [New Mexico Rail Runner Express](#).

Architecture

10 Tallest Buildings in Albuquerque

Rank	Name	Height	Floors
1	Bank of Albuquerque Tower	351 feet (107 m)	22
2	Hyatt Regency Albuquerque	256 feet (78 m)	21
3	Compass Bank Building	238 feet (73 m)	18
4	Albuquerque Petroleum Building	235 feet (72 m)	15
5	Bank of the West Tower	213 feet (65 m)	17
6	Gold Building	203 feet (62 m)	14
7	Dennis Chavez Federal Building	197 feet (60 m)	13
8	PNM Building	184 feet (56 m)	12
9	Simms Building	180 feet (55 m)	13
10	Pete V. Domenici U.S. Courthouse	167 feet (51 m)	7

Due to the nature of the soil in the Rio Grande Valley, the skyline is lower than might be expected in a city of commensurate size elsewhere.

Culture

Arts and theatre

[Tricklock Company](#) is Albuquerque's only international touring theatre company. Every January, Tricklock hosts the Revolutions International Theatre Festival, which brings in performers from around the world.

[The American Shakespeare Project](#) is a local Shakespearean community theater company which is devoted to staging productions of Shakespeare's plays (and sometimes those of his contemporaries) with heavy emphasis on the textual authority of the [First Folio](#).

The [New Mexico Symphony Orchestra](#) performs and rehearses at Popejoy Hall on the UNM campus.

Tourism and recreation



Balloons at the Albuquerque International Balloon Fiesta

Albuquerque contains many variety of museums, shops and other points of interest. Some of these include the [Albuquerque Biological Park](#) and [Old Town Albuquerque](#)

The city hosts the annual [New Mexico State Fair](#) for 17 days in September at [Expo New Mexico](#), formerly the New Mexico State Fairgrounds.

Albuquerque also has the largest [hot air balloon](#) gathering in the world. It is called the [Albuquerque International Balloon Fiesta](#) and it is held during

early October. It was started in [1972](#) with 13 balloons. It progressed and in [2000](#) there were a record 1000 balloons that attended and lifted off in a mass ascension. Since 2000 the officials keep it to no more than 700 registered balloons for safety, and it is the most photographed event in the world. The city is also home to the annual Gathering of Nations [Pow-Wow](#), an international event featuring over 3,000 indigenous [Native American](#) dancers and singers representing more than 500 tribes from Canada and the United States. Dancers and singers participate socially and competitively at the event, held in April.

The Sandia Mountains to the East offer interesting and varied rock climbing. Climbs from one to 10 pitches can be found at all ability levels.

Sports



Isotopes Park

Club	Sport	League	Venue
Albuquerque Isotopes	Baseball	AAA PCL	Isotopes Park
Albuquerque Thunderbirds	Basketball	NBA D-League	Tingley Coliseum
New Mexico Scorpions	AA Minor League Ice Hockey	CHL	Santa Ana Star Center
University of New Mexico	NCAA Division I Football	Mountain West Conference	University Stadium
University of New Mexico	NCAA Division I Men's and Women's Basketball	Mountain West Conference	University Arena (also known as The Pit)

Media

Albuquerque is a media hub for much of [New Mexico](#). The city is served by two major newspapers, the [Albuquerque Journal](#) and the [Albuquerque Tribune](#)

Albuquerque is also home to several radio and television stations that serve the metropolitan area.

Demographics

As of the [census](#)^{GR2} of 2000, there were 448,607 people, 183,236 households, and 112,690 families residing in the city. The [population density](#) was 958.9/km² (2,483.4/mi²). There were 198,465 housing units at an average density of 424.2/km² (1,098.7/mi²). The racial makeup of the city was 71.59% [White](#), 3.09% [Black](#) or [African American](#), 3.89% [Native American](#), 2.24%

[Asian](#), 0.10% [Pacific Islander](#), 14.78% from [other races](#), and 4.31% from two or more races. 39.92% of the population were [Hispanic](#) or [Latino](#) of any race. There were 183,236 households out of which 30.2% had children under the age of 18 living with them, 43.6% were [married couples](#) living together, 12.9% had a female householder with no husband present, and 38.5% were non-families. 30.5% of all households were made up of individuals and 8.4% had someone living alone who was 65 years of age or older. The average household size was 2.40 and the average family size was 3.02. In the city the population was spread out with 24.5% under the age of 18, 10.6% from 18 to 24, 30.9% from 25 to 44, 21.9% from 45 to 64, and 12.0% who were 65 years of age or older. The median age was 35 years. For every 100 females there were 94.4 males. For every 100 females age 18 and over, there were 91.8 males. The median income for a household in the city was \$38,272, and the median income for a family was \$46,979. Males had a median income of \$34,208 versus \$26,397 for females. The [per capita income](#) for the city was \$20,884. About 10.0% of families and 13.5% of the population were below the [poverty line](#), including 17.4% of those under age 18 and 8.5% of those age 65 or over.

Educational institutions



University of New Mexico

The city is home to [University of New Mexico](#), one of the two large state universities in New Mexico. UNM includes a School of Medicine which was ranked in the top 15 primary care-oriented medical schools in the country. ^[citation needed] Albuquerque is also home to the [National American University](#) and [Trinity Southwest University](#). The [Central New Mexico Community College](#) serves most of the area, as do several technical schools including [ITT Technical Institute](#) and the [University of Phoenix](#). Furthermore, [The Art Center Design College](#) offers bachelor's degrees in Graphic and Interior Design, animation, illustration, Photography as well as several other disciplines. [Albuquerque Public Schools](#), one of the largest [school districts](#) in the nation, provides educational services to over 87,000 children across the city.

Transportation

Highways

- [Interstate 25](#) - Pan American Freeway
- [Interstate 40](#) - Coronado Freeway

Mass transit

[ABQ RIDE](#) is the local transit agency in Albuquerque. ABQ RIDE operates a variety of city bus routes including the [Rapid Ride BRT](#) route.

Rail

The city has recently incorporated a [commuter rail](#) line that serves the region. The [New Mexico Rail Runner Express](#) system began operation in July 2006 on existing [BNSF Railway](#). Stops are open serving [Sandoval County](#), Los Ranchos de Albuquerque and the North Valley, downtown Albuquerque, and [Los Lunas](#). Stops will be added later in 2007 to serve Bernalillo, Sandia Pueblo, Albuquerque's airport and the South Valley, Isleta Pueblo, and Belen. A possible major expansion to [Santa Fe](#) is in the planning stages. [Amtrak](#)'s [Southwest Chief](#), which travels between [Chicago](#) and [Los Angeles](#), also serves the Albuquerque area.

Airports

Albuquerque is served by two airports, the largest of which is [Albuquerque International Sunport](#). It is located located 3 miles (5 km) southeast of the central business district (CBD) of Albuquerque. [Double Eagle II Airport](#) is the second-largest airport. It is primarily used as an [Air ambulance](#), corporate flight, military flight, training flight, [charter flight](#), and private flight facility.

III Abstracts

Approaches to Optimizing Well Performance