

BW - 19

**PERMITS,
RENEWALS,
& MODS**



Key Energy Services
6 Destà Drive
Suite 4400
Midland, Texas 79705

Telephone: 432.620.0300

Facsimile: 432.571.7173

www.keyenergy.com

RECEIVED

2008 APR 14 PM 1 31

April 10, 2008

Mr. Wayne Price
Environmental Bureau Chief
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Re: Discharge Permit City of Carlsbad Well No. 1 Brine Well (BW-019) Renewal
Discharge Permit State Well No. 1 Brine Well (BW-028) Renewal

Dear Mr. Price:

Enclosed you will find the original renewals referenced above along with Key's check in the amount of \$3,400.00 for the renewal fees.

If you need anything else, please do not hesitate to contact me at 432 571-7116 or Louis Sanchez at 432 571-7382.

Sincerely,

A handwritten signature in cursive script that reads "Robyn Miller". The signature is written in dark ink and is positioned above the printed name.

Robyn Miller, CLA

Enclosures

NM-13032
NM-13035

ACKNOWLEDGEMENT OF RECEIPT
OF CHECK/CASH

I hereby acknowledge receipt of check No. dated 4/2/08

or cash received on in the amount of \$ 1700⁰⁰

from Key Energy Services

for BW-19

Submitted by: Lawrence Romero Date: 8/18/08

Submitted to ASD by: Yanira Romero Date: 8/18/08

Received in ASD by: Date:

Filing Fee New Facility Renewal

Modification Other

Organization Code 521.07 Applicable FY 2004

To be deposited in the Water Quality Management Fund.

Full Payment ☒ or Annual Increment



Nm 13032

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.

Director

Oil Conservation Division

March 7, 2008

Mr. Louis Sanchez
Key Energy Services, Inc.
6 Desta Drive, Suite 4400
Midland, Texas 79705

Re: Discharge Permit City of Carlsbad Well No. 1 Brine Well (BW-019) Renewal

Dear Mr. Sanchez:

Pursuant to all applicable parts of the Water Quality Control Commission (WQCC) Regulations 20.6.2 NMAC and more specifically 20.6.2.3104 - 20.6.2.3999 discharge permit, and 20.6.2.5000-.5299 Underground Injection Control, the Oil Conservation Division (OCD) hereby approves the discharge permit and authorizes the operation and injection for the Key Energy Services, Inc. (**Owner/Operator**) brine well BW-019 (API# 30-015-21842) located in the SE/4, NE/4 of Section 36, Township 22 South, and Range 26 East, NMPM, Eddy County, New Mexico, under the conditions specified in the enclosed **Attachment To The Discharge Permit**.

Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this Letter including permit fees.**

Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If you have any questions, please contact Carl Chavez of my staff at (505-476-3491) or E-mail carlj.chavez@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,

Wayne Price

Environmental Bureau Chief

LWP/cc

Attachments-1

xc: OCD District Office

**ATTACHMENT TO THE DISCHARGE PERMIT
Key Energy Services, Inc. Brine Well (BW-019)
DISCHARGE PERMIT APPROVAL CONDITIONS**

March 7, 2008

Please remit a check for \$1700.00 made payable to Water Quality Management Fund:

**Water Quality Management Fund
C/o: Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, New Mexico 87505**

- 1. Payment of Discharge Plan Fees:** All discharge permits are subject to WQCC Regulations. Every billable facility that submits a discharge permit application will be assessed a filing fee of \$100.00, plus a renewal flat fee (*see* WQCC Regulation 20.6.2.3114 NMAC). The Oil Conservation Division ("OCD") has received the required \$100.00 filing fee. However, the owner/operator still owes the required \$1,700.00 permit fee for a Class III Brine Well.
- 2. Permit Expiration and Renewal:** Pursuant to WQCC Regulation 20.6.2.3109.H.4 NMAC, this permit is valid for a period of five years. **The permit will expire on December 19, 2011** and an application for renewal should be submitted no later than 120 days before that expiration date. Pursuant to WQCC Regulation 20.6.2.3106.F NMAC, if a discharger submits a discharge permit renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit will not expire until the application for renewal has been approved or disapproved. ***Expired permits are a violation of the Water Quality Act {Chapter 74, Article 6, NMSA1978} and civil penalties may be assessed accordingly.***
- 3. Permit Terms and Conditions:** Pursuant to WQCC Regulation 20.6.2.3104 NMAC, when a permit has been issued, the owner/operator must ensure that all discharges shall be consistent with the terms and conditions of the permit. In addition, all facilities shall abide by the applicable rules and regulations administered by the OCD pursuant to the Oil and Gas Act, NMSA 1978, Sections 70-2-1 through 70-2-38.
- 4. Owner/Operator Commitments:** The owner/operator shall abide by all commitments submitted in its September 17, 2007 discharge permit application, including attachments and subsequent amendments and these conditions for approval. Permit applications that reference previously approved plans on file with the division shall be incorporated in this permit and the owner/operator shall abide by all previous commitments of such plans and these conditions for approval.
- 5. Modifications:** WQCC Regulation 20.6.2.3107.C, 20.6.2.3109 and 20.6.2.5101.I NMAC addresses possible future modifications of a permit. The owner/operator (discharger) shall notify

the OCD of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants. The Division Director may require a permit modification if any water quality standard specified at 20.6.2.3103 NMAC is being or will be exceeded, or if a toxic pollutant as defined in WQCC Regulation 20.6.2.7 NMAC is present in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the Water Quality Standards for Interstate and Intrastate streams as specified in 20.6.4 NMAC are being or may be violated in surface water in New Mexico.

6. Waste Disposal and Storage: The owner/operator shall dispose of all wastes at an OCD-approved facility. Only oil field RCRA-exempt wastes may be disposed of by injection in a Class II well. RCRA non-hazardous, non-exempt oil field wastes may be disposed of at an OCD-approved facility upon proper waste determination pursuant to 40 CFR Part 261. Any waste stream that is not listed in the discharge permit application must be approved by the OCD on a case-by-case basis.

A. OCD Rule 712 Waste: Pursuant to OCD Rule 712 (19.15.9.712 NMAC) disposal of certain non-domestic waste without notification to the OCD is allowed at NMED permitted solid waste facilities if the waste stream has been identified in the discharge permit and existing process knowledge of the waste stream does not change.

B. Waste Storage: The owner/operator shall store all waste in an impermeable bermed area, except waste generated during emergency response operations for up to 72 hours. All waste storage areas shall be identified in the discharge permit application. Any waste storage area not identified in the permit shall be approved on a case-by-case basis only. The owner/operator shall not store oil field waste on-site for more than 180 days unless approved by the OCD.

7. Drum Storage: The owner/operator must store all drums, including empty drums, containing materials other than fresh water on an impermeable pad with curbing. The owner/operator must store empty drums on their sides with the bungs in place and lined up on a horizontal plane. The owner/operator must store chemicals in other containers, such as tote tanks, sacks, or buckets on an impermeable pad with curbing.

8. Process, Maintenance and Yard Areas: The owner/operator shall either pave and curb or have some type of spill collection device incorporated into the design at all process, maintenance, and yard areas which show evidence that water contaminants from releases, leaks and spills have reached the ground surface.

9. Above Ground Tanks: The owner/operator shall ensure that all aboveground tanks have impermeable secondary containment (e.g., liners and berms), which will contain a volume of at least one-third greater than the total volume of the largest tank or all interconnected tanks. The owner/operator shall retrofit all existing tanks before discharge permit renewal. Tanks that contain fresh water or fluids that are gases at atmospheric temperature and pressure are exempt from this condition.

10. Labeling: The owner/operator shall clearly label all tanks, drums, and containers to identify their contents and other emergency notification information. The owner/operator may use a tank code numbering system, which is incorporated into their emergency response plans.

11. Below-Grade Tanks/Sumps and Pits/Ponds.

A. All below-grade tanks and sumps must be approved by the OCD prior to installation and must incorporate secondary containment with leak detection into the design. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal. All existing below-grade tanks and sumps without secondary containment and leak detection must be tested annually or as specified herein. Systems that have secondary containment with leak detection shall have a monthly inspection of the leak detection system to determine if the primary containment is leaking. Small sumps or depressions in secondary containment systems used to facilitate fluid removal are exempt from these requirements if fluids are removed within 72 hours.

B. All pits and ponds, including modifications and retrofits, shall be designed by a certified registered professional engineer and approved by the OCD prior to installation. In general, all pits or ponds shall have approved hydrologic and geologic reports, location, foundation, liners, and secondary containment with leak detection, monitoring and closure plans. All pits or ponds shall be designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health, safety and the environment for the foreseeable future. The owner/operator shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal.

C. The owner/operator shall ensure that all exposed pits, including lined pits and open top tanks (8 feet in diameter or larger) shall be fenced, screened, netted, or otherwise rendered non-hazardous to wildlife, including migratory birds.

D. The owner/operator shall maintain the results of tests and inspections at the facility covered by this discharge permit and available for OCD inspection. The owner/operator shall report the discovery of any system which is found to be leaking or has lost integrity to the OCD within 15 days. The owner/operator may propose various methods for testing such as pressure testing to 3 pounds per square inch greater than normal operating pressure and/or visual inspection of cleaned tanks and/or sumps, or other OCD-approved methods. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

12. Underground Process/Wastewater Lines:

A. The owner/operator shall test all underground process/wastewater pipelines at least once every five (5) years to demonstrate their mechanical integrity, except lines containing fresh water or fluids that are gases at atmospheric temperature and pressure. Pressure rated pipe shall be tested by pressuring up to one and one-half times the normal operating pressure, if possible, or for

atmospheric drain systems, to 3 pounds per square inch greater than normal operating pressure, and pressure held for a minimum of 30 minutes with no more than a 1% loss/gain in pressure. The owner/operator may use other methods for testing if approved by the OCD.

B. The owner/operator shall maintain underground process and wastewater pipeline schematic diagrams or plans showing all drains, vents, risers, valves, underground piping, pipe type, rating, size, and approximate location. All new underground piping must be approved by the OCD prior to installation. The owner/operator shall report any leaks or loss of integrity to the OCD within 15 days of discovery. The owner/operator shall maintain the results of all tests at the facility covered by this discharge permit and they shall be available for OCD inspection. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

13. Class V Wells: The owner/operator shall close all Class V wells (e.g., septic systems, leach fields, dry wells, etc.) that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes unless it can be demonstrated that ground water will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only, must be permitted by the New Mexico Environment Department (NMED).

14. Housekeeping: The owner/operator shall inspect all systems designed for spill collection/prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records at the facility and available for OCD inspection.

15. Spill Reporting: The owner/operator shall report all unauthorized discharges, spills, leaks and releases and conduct corrective action pursuant to WQCC Regulation 20.5.12.1203 NMAC and OCD Rule 116 (19.15.3.116 NMAC). The owner/operator shall notify both the OCD District Office and the Santa Fe Office within 24 hours and file a written report within 15 days.

16. OCD Inspections: The OCD may place additional requirements on the facility and modify the permit conditions based on OCD inspections.

17. Storm Water: The owner/operator shall implement and maintain run-on and runoff plans and controls. The owner/operator shall not discharge any water contaminant that exceeds the WQCC standards specified in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) including any oil sheen in any storm water run-off. The owner/operator shall notify the OCD within 24 hours of discovery of any releases and shall take immediate corrective action(s) to stop the discharge.

18. Unauthorized Discharges: The owner/operator shall not allow or cause water pollution, discharge or release of any water contaminant that exceeds the WQCC standards listed in

20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) unless specifically listed in the permit application and approved herein. **An unauthorized discharge is a violation of this permit.**

19. **Vadose Zone and Water Pollution:** The owner/operator shall address any contamination through the discharge permit process or pursuant to WQCC 20.6.2.4000-.4116 NMAC (Prevention and Abatement of Water Pollution). The OCD may require the owner/operator to modify its permit for investigation, remediation, abatement, and monitoring requirements for any vadose zone or water pollution. Failure to perform any required investigation, remediation, abatement and submit subsequent reports will be a violation of the permit.

20. **Additional Site Specific Conditions:** N/A

21. **Brine Well(s) Identification, Operation, Monitoring, Bonding and Reporting.**

A. Well Identification: API # 30-015-21842

B. Well Work Over Operations: OCD approval will be obtained prior to performing remedial work, pressure test or any other work. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Environmental Bureau and District Office.

C. Production Method: Fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out. Operators may request long term reverse operation if they can demonstrate that additional casing and monitoring systems are installed and approved by OCD. Operating in the reverse mode for more than 24 hours unless approved otherwise is a violation of this permit.

D. Well Pressure Limits: **The maximum operating surface injection and/or test pressure measured at the wellhead shall not exceed 213 psig unless otherwise approved by the OCD.** The operator shall have a working pressure limiting device or controls to prevent overpressure. Any pressure that causes new fractures or propagate existing fractures or causes damage to the system shall be reported to OCD within 24 hours of discovery.

E. Mechanical Integrity Testing: Conduct an annual open to formation pressure test by pressuring up the formation with approved fluids or gas to a minimum of 300 psig measured on the surface casing for four hours. However, no operator may exceed test pressures that may cause formation fracturing (see item 21.D above) or system failures. Systems requiring test pressures less than 300 psig must be approved by OCD prior to testing. At least once every five years and during well work-overs the salt cavern formation will be isolated from the casing/tubing annulus and the casing

pressure tested at 300 psig for 30 minutes. All pressure tests must be performed per the scheduled shown below and witnessed by OCD unless otherwise approved.

Testing Schedule:

2007- 4 hour @ 300 psig casing open to formation test
2008- 30 minute @ 300 psig casing test only (set packer to isolate formation)
2009- 4 hour @ 300 psig casing open to formation test
2010- 4 hour @ 300 psig casing open to formation test
2011- 4 hour @ 300 psig casing open to formation test

- F. Capacity/ Cavity Configuration and Subsidence Survey: The operator shall provide information on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence, collapse or damage to property, or become a threat to public health and the environment. This information shall be supplied in each annual report. OCD may require the operator to perform additional well surveys, test, and install subsidence monitoring in order to demonstrate the integrity of the system. If the operator cannot demonstrate the integrity of the system to the satisfaction of the Division then the operator may be required to shut-down, close the site and properly plug and abandoned the well.

Any subsidence must be reported within 24 hours of discovery.

- G. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in the annual report.
- H. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (method 40 CFR 136.3) using EPA methods.
- I. Area of Review (AOR): The operator shall report within 24 hours of discovery of any new wells, conduits, or any other device that penetrates or may penetrate the injection zone within ¼ mile from the brine well.
- J. Loss of Mechanical Integrity: The operator shall report within 24 hours of discovery of any failure of the casing, tubing or packer, or movement of fluids outside of the injection zone. The operator shall cease operations until proper repairs are made and the operator receives OCD approval to re-start injection operations.
- K. Bonding or Financial Assurance: The operator shall maintain at a minimum, a one well plugging bond in the amount of \$50,000.00 to restore the site, plug and abandon

the well by January 1, 2008, pursuant to OCD rules and regulations. If warranted, OCD may require additional financial assurance.

L. Annual Report: All operators shall submit an annual report due on January 31 of each year. The report shall include the following information:

1. Cover sheet marked as "Annual Brine Well Report, name of operator, BW permit #, API# of well(s), date of report, and person submitting report.
2. Brief summary of brine wells operations including description and reason for any remedial or major work on the well. Copy of C-103.
3. Production volumes as required above in 21.G. including a running total should be carried over to each year. The maximum and average injection pressure.
4. A copy of the chemical analysis as required above in 21.H.
5. A copy of any mechanical integrity test chart, including the type of test, i.e. open to formation or casing test.
6. Brief explanation describing deviations from normal production methods.
7. A copy of any leaks and spills reports.
8. If applicable, results of any groundwater monitoring.
9. Information required from cavity/subsidence 21.F. above.
10. An Area of Review (AOR) summary.
11. Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5101.

22. Transfer of Discharge Permit: Pursuant to WQCC 20.6.2.5101.H the owner/operator and new owner/operator shall provide written notice of any transfer of the permit. Both parties shall sign the notice 30 days prior to any transfer of ownership, control or possession of a facility with an approved discharge permit. In addition, the purchaser shall include a written commitment to comply with the terms and conditions of the previously approved discharge permit. OCD will not transfer brine well operations until proper bonding or financial assurance is in place and approved by the division. OCD reserves the right to require a modification of the permit during transfer.

23. Closure: The owner/operator shall notify the OCD when operations of the facility are to be discontinued for a period in excess of six months. Prior to closure of the facility, the operator shall submit for OCD approval, a closure plan including a completed C-103 form for plugging and abandonment of the well(s). Closure and waste disposal shall be in accordance with the statutes, rules and regulations in effect at the time of closure.

~~XXXXXXXXXXXXXXXXXXXX~~ KEY ENERGY SERVICES, LLC

24. Certification: ~~Sanchez Corporation~~ (Owner/Operator), by the officer whose signature appears below, accepts this permit and agrees to comply with all submitted commitments, including these terms and conditions contained here. **Owner/Operator** further acknowledges that the OCD may, for good cause shown, as necessary to protect fresh water, public health, safety, and the environment, change the conditions and requirements of this permit administratively.

Mr. Louis Sanchez
City of Carlsbad Well No. 1 (BW-019)
March 7, 2008
Page 9 of 9

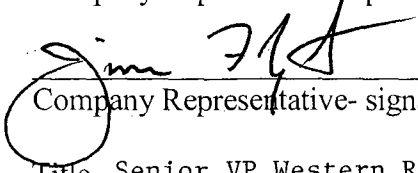
Conditions accepted by: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

KEY ENERGY SERVICES, LLC

Company Name-print name above

Jim Flynt

Company Representative- print name



Company Representative- signature

Title Senior VP Western Region

Date: 4/8/08



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

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Director

Oil Conservation Division

March 7, 2008

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Key Energy Services, Inc.
6 Desta Drive, Suite 4400
Midland, Texas 79705

Re: **Discharge Permit City of Carlsbad Well No. 1 Brine Well (BW-019) Renewal**

Dear Mr. Sanchez:

Pursuant to all applicable parts of the Water Quality Control Commission (WQCC) Regulations 20.6.2 NMAC and more specifically 20.6.2.3104 - 20.6.2.3999 discharge permit, and 20.6.2.5000-.5299 Underground Injection Control, the Oil Conservation Division (OCD) hereby approves the discharge permit and authorizes the operation and injection for the Key Energy Services, Inc. (**Owner/Operator**) brine well BW-019 (API# 30-015-21842) located in the SE/4, NE/4 of Section 36, Township 22 South, and Range 26 East, NMPM, Eddy County, New Mexico, under the conditions specified in the enclosed **Attachment To The Discharge Permit**.

Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this Letter including permit fees.**

Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If you have any questions, please contact Carl Chavez of my staff at (505-476-3491) or E-mail carlj.chavez@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,

Wayne Price

Environmental Bureau Chief

LWP/cc

Attachments-1

xc: OCD District Office

**ATTACHMENT TO THE DISCHARGE PERMIT
Key Energy Services, Inc. Brine Well (BW-019)
DISCHARGE PERMIT APPROVAL CONDITIONS**

March 7, 2008

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C/o: Oil Conservation Division
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A. The owner/operator shall test all underground process/wastewater pipelines at least once every five (5) years to demonstrate their mechanical integrity, except lines containing fresh water or fluids that are gases at atmospheric temperature and pressure. Pressure rated pipe shall be tested by pressuring up to one and one-half times the normal operating pressure, if possible, or for

atmospheric drain systems, to 3 pounds per square inch greater than normal operating pressure, and pressure held for a minimum of 30 minutes with no more than a 1% loss/gain in pressure. The owner/operator may use other methods for testing if approved by the OCD.

B. The owner/operator shall maintain underground process and wastewater pipeline schematic diagrams or plans showing all drains, vents, risers, valves, underground piping, pipe type, rating, size, and approximate location. All new underground piping must be approved by the OCD prior to installation. The owner/operator shall report any leaks or loss of integrity to the OCD within 15 days of discovery. The owner/operator shall maintain the results of all tests at the facility covered by this discharge permit and they shall be available for OCD inspection. The owner/operator shall notify the OCD at least 72 hours prior to all testing.

13. Class V Wells: The owner/operator shall close all Class V wells (e.g., septic systems, leach fields, dry wells, etc.) that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes unless it can be demonstrated that ground water will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD-regulated facilities that inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only, must be permitted by the New Mexico Environment Department (NMED).

14. Housekeeping: The owner/operator shall inspect all systems designed for spill collection/prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records at the facility and available for OCD inspection.

15. Spill Reporting: The owner/operator shall report all unauthorized discharges, spills, leaks and releases and conduct corrective action pursuant to WQCC Regulation 20.5.12.1203 NMAC and OCD Rule 116 (19.15.3.116 NMAC). The owner/operator shall notify both the OCD District Office and the Santa Fe Office within 24 hours and file a written report within 15 days.

16. OCD Inspections: The OCD may place additional requirements on the facility and modify the permit conditions based on OCD inspections.

17. Storm Water: The owner/operator shall implement and maintain run-on and runoff plans and controls. The owner/operator shall not discharge any water contaminant that exceeds the WQCC standards specified in 20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) including any oil sheen in any storm water run-off. The owner/operator shall notify the OCD within 24 hours of discovery of any releases and shall take immediate corrective action(s) to stop the discharge.

18. Unauthorized Discharges: The owner/operator shall not allow or cause water pollution, discharge or release of any water contaminant that exceeds the WQCC standards listed in

20.6.2.3101 NMAC or 20.6.4 NMAC (Water Quality Standards for Interstate and Intrastate Streams) unless specifically listed in the permit application and approved herein. **An unauthorized discharge is a violation of this permit.**

19. Vadose Zone and Water Pollution: The owner/operator shall address any contamination through the discharge permit process or pursuant to WQCC 20.6.2.4000-.4116 NMAC (Prevention and Abatement of Water Pollution). The OCD may require the owner/operator to modify its permit for investigation, remediation, abatement, and monitoring requirements for any vadose zone or water pollution. Failure to perform any required investigation, remediation, abatement and submit subsequent reports will be a violation of the permit.

20. Additional Site Specific Conditions: N/A

21. Brine Well(s) Identification, Operation, Monitoring, Bonding and Reporting.

A. Well Identification: API # 30-015-21842

B. Well Work Over Operations: OCD approval will be obtained prior to performing remedial work, pressure test or any other work. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Environmental Bureau and District Office.

C. Production Method: Fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out. Operators may request long term reverse operation if they can demonstrate that additional casing and monitoring systems are installed and approved by OCD. Operating in the reverse mode for more than 24 hours unless approved otherwise is a violation of this permit.

D. Well Pressure Limits: **The maximum operating surface injection and/or test pressure measured at the wellhead shall not exceed 213 psig unless otherwise approved by the OCD.** The operator shall have a working pressure limiting device or controls to prevent overpressure. Any pressure that causes new fractures or propagate existing fractures or causes damage to the system shall be reported to OCD within 24 hours of discovery.

E. Mechanical Integrity Testing: Conduct an annual open to formation pressure test by pressuring up the formation with approved fluids or gas to a minimum of 300 psig measured on the surface casing for four hours. However, no operator may exceed test pressures that may cause formation fracturing (see item 21.D above) or system failures. Systems requiring test pressures less than 300 psig must be approved by OCD prior to testing. At least once every five years and during well work-overs the salt cavern formation will be isolated from the casing/tubing annulus and the casing

pressure tested at 300 psig for 30 minutes. All pressure tests must be performed per the scheduled shown below and witnessed by OCD unless otherwise approved.

Testing Schedule:

2007- 4 hour @ 300 psig casing open to formation test
2008- 30 minute @ 300 psig casing test only (set packer to isolate formation)
2009- 4 hour @ 300 psig casing open to formation test
2010- 4 hour @ 300 psig casing open to formation test
2011- 4 hour @ 300 psig casing open to formation test

- F. Capacity/ Cavity Configuration and Subsidence Survey: The operator shall provide information on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence, collapse or damage to property, or become a threat to public health and the environment. This information shall be supplied in each annual report. OCD may require the operator to perform additional well surveys, test, and install subsidence monitoring in order to demonstrate the integrity of the system. If the operator cannot demonstrate the integrity of the system to the satisfaction of the Division then the operator may be required to shut-down, close the site and properly plug and abandoned the well.

Any subsidence must be reported within 24 hours of discovery.

- G. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in the annual report.
- H. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (method 40 CFR 136.3) using EPA methods.
- I. Area of Review (AOR): The operator shall report within 24 hours of discovery of any new wells, conduits, or any other device that penetrates or may penetrate the injection zone within ¼ mile from the brine well.
- J. Loss of Mechanical Integrity: The operator shall report within 24 hours of discovery of any failure of the casing, tubing or packer, or movement of fluids outside of the injection zone. The operator shall cease operations until proper repairs are made and the operator receives OCD approval to re-start injection operations.
- K. Bonding or Financial Assurance: The operator shall maintain at a minimum, a one well plugging bond in the amount of \$50,000.00 to restore the site, plug and abandon

the well by January 1, 2008, pursuant to OCD rules and regulations. If warranted, OCD may require additional financial assurance.

L. Annual Report: All operators shall submit an annual report due on January 31 of each year. The report shall include the following information:

1. Cover sheet marked as "Annual Brine Well Report, name of operator, BW permit #, API# of well(s), date of report, and person submitting report.
2. Brief summary of brine wells operations including description and reason for any remedial or major work on the well. Copy of C-103.
3. Production volumes as required above in 21.G. including a running total should be carried over to each year. The maximum and average injection pressure.
4. A copy of the chemical analysis as required above in 21.H.
5. A copy of any mechanical integrity test chart, including the type of test, i.e. open to formation or casing test.
6. Brief explanation describing deviations from normal production methods.
7. A copy of any leaks and spills reports.
8. If applicable, results of any groundwater monitoring.
9. Information required from cavity/subsidence 21.F. above.
10. An Area of Review (AOR) summary.
11. Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5101.

22. Transfer of Discharge Permit: Pursuant to WQCC 20.6.2.5101.H the owner/operator and new owner/operator shall provide written notice of any transfer of the permit. Both parties shall sign the notice 30 days prior to any transfer of ownership, control or possession of a facility with an approved discharge permit. In addition, the purchaser shall include a written commitment to comply with the terms and conditions of the previously approved discharge permit. OCD will not transfer brine well operations until proper bonding or financial assurance is in place and approved by the division. OCD reserves the right to require a modification of the permit during transfer.

23. Closure: The owner/operator shall notify the OCD when operations of the facility are to be discontinued for a period in excess of six months. Prior to closure of the facility, the operator shall submit for OCD approval, a closure plan including a completed C-103 form for plugging and abandonment of the well(s). Closure and waste disposal shall be in accordance with the statutes, rules and regulations in effect at the time of closure.

24. Certification: Sanchez Corporation (Owner/Operator), by the officer whose signature appears below, accepts this permit and agrees to comply with all submitted commitments, including these terms and conditions contained here. **Owner/Operator** further acknowledges that the OCD may, for good cause shown, as necessary to protect fresh water, public health, safety, and the environment, change the conditions and requirements of this permit administratively.

Mr. Louis Sanchez
City of Carlsbad Well No. 1 (BW-019)
March 7, 2008
Page 9 of 9

Conditions accepted by: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

Company Name-print name above

Company Representative- print name

Company Representative- signature

Title _____

Date: _____

CARLSBAD CURRENT-ARGUS

Mail Payment To:
Carlsbad Current-Argus
P.O. Box 1629
Carlsbad, NM 88221-1629

ADVERTISING INVOICE/STATEMENT

DETACH THIS STUB AND RETURN WITH PAYMENT PAYABLE TO:

Carlsbad Current-Argus

PO#
52100-0000007518

NM OIL & CONSERVATION, ENERGY,
1222 S SAINT FRANCIS DR
SANTA FE NM 87505-4000

ACCOUNT NO.	INVOICE NO.
730593	0003710061
DUE DATE	AMOUNT DUE
03/24/08	176.96
BILLING PERIOD	THROUGH
02/01/08	02/29/08
AMOUNT PAID	

RETAIN THIS PORTION FOR YOUR RECORDS

DATE	EDT	CLASS	DESCRIPTION	COL	DEPTH	TMS RUN	TOTAL SIZE	RATE	AMOUNT
0201			PREVIOUS BALANCE						234.38
0221			PAYMENT-THANK YOU						234.38-
0203	CRC	0152	1000906772/FEBRUA/7518	1	278.00	1	278.00		166.36
0203		0152	NM TAX						10.60

WE KNOW YOU HAVE CHOICES -
THANK YOU FOR YOUR BUSINESS !

CURRENT	OVER 30 DAYS	OVER 60 DAYS	OVER 90 DAYS	OVER 120 DAYS	TOTAL DUE
176.96	.00	.00	.00	.00	176.96

TYPE	CONTRACT QUANTITY	EXPIRATION DATE	CURRENT USAGE	TOTAL USED	QUANTITY REMAINING	SALES PERSON
						0433

NOTE: Bills are due and payable when rendered. If the ending balance of any statement is not paid in full during the following month, that portion of it which remains unpaid, after application of all payments and those credits which pertain to that balance (rather than to the current month's charges), will be assessed a FINANCE CHARGE of 1.35% per month (an ANNUAL PERCENTAGE RATE not to exceed 18% per year). The minimum FINANCE CHARGE (which will apply should there be any unpaid balance) will be \$0.50. No FINANCE will be made if the ending balance is paid in full within the ensuing month.

For your records:

ACCOUNT NO.	NAME	INVOICE NUMBER	AMOUNT PAID
730593	NM OIL & CONSERVATION, ENERGY,	0003710061	
		DUE DATE	
		03/24/08	

Carlsbad Current-Argus

For Billing Inquiries Call: (505) 887-5501

ADVERTISING INVOICE/STATEMENT

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

April Hernandez, being first duly sworn,
on oath says:

That she is HR Manager of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

February 3, 2008

That the cost of publication is \$ 176.96 that Payment Thereof has been made and will be assessed as court costs.

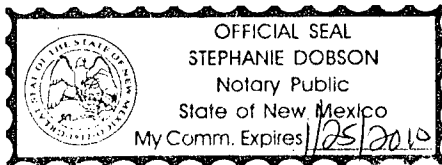
April Hernandez

Subscribed and sworn to before me this

4th day of February, 2008
Stephanie Dobson

My commission Expires on 1/25/2010

Notary Public



February 3, 2008

NOTICE OF PUBLICATION STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RE- SOURCE DEPT ARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations (20.6.2.3106 NMAC), the following discharge permit application(s) has been submitted to the Director of the New Mexico Oil Conservation Division ("NMOCD"), 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(BW-005) Jims Water Service, Ms. Sherry Glass, 11413 US Hwy. 82, Artesia, New Mexico 88210, has submitted an application for the renewal of a discharge permit for the brine well "State 24 Well No. 001" (API# 30-015-02036) located in the NW/4, SE/4 of Section 24, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico. The brine extraction well is located approximately 14 miles east of Artesia, New Mexico on Hwy. 82, turn south 6 miles on Hwy. 360, and turn west on Hagerman Road about 1.25 miles, then turn north into facility. Fresh water is injected into the Salado Formation at a depth of 456 feet and 900 barrels per day of brine water is extracted with a total dissolved solids (TDS) concentration of approximately 300,000 mg/L for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 225 feet with a TDS of approximately 600 - 6,000 mg/L. The discharge permit addresses well construction, operation, monitoring of the well, associated surface facilities, and provides a contingency plan in the event of accidental spills, leaks and other acci-

dental discharges in order to protect fresh water.

(BW-019) Key Energy Services, Inc., Mr. Louis Sanchez, 6 Desota Drive, Suite 4400, Midland, Texas 79705, has submitted an application for the renewal of a discharge permit for the brine well "City of Carlsbad Well No. 001" (API# 30-015-21842) located in the SE/4, NE/4 of Section 36, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico. The brine extraction well is located approximately 2 miles south of Carlsbad, New Mexico, and 0.5 mile east on Hwy. 62/180.

Fresh water is injected into the Salado Formation at a depth of 710 feet and 650 barrels per day of brine water is extracted with a total dissolved solids (TDS) concentration of approximately 300,000 mg/L for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 150 feet with a TDS of approximately 1,800 mg/L. The discharge permit addresses well construction, operation, monitoring of the well, associated surface facilities, and provides a contingency plan in the event of accidental spills, leaks and other acci-

dent discharges in order to protect fresh water. The NMOCD has determined that the application is administratively complete and has prepared a draft permit. The NMOCD will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments or requesting to be on a facility-specific mailing list for future notices may contact the Environmental Bureau Chief of the Oil Conservation Division at the address given above. The administrative completeness determination and draft permit may be viewed at the above address between 8:00 a.m. and 4:00 p.m.,

Monday through Friday, or may also be viewed at the NMOCD web site <http://www.emnrd.state.nm.us/ocd/>. Persons interested in obtaining a copy of the application and draft permit may contact the NMOCD at the address given above. Prior to ruling on any proposed discharge permit or modification, the Director shall allow a period of at least thirty (30) days after the date of publication of this notice, during which interested persons may submit comments or request that NMOCD hold a public hearing. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines that there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed permit based on information available, including all comments received. If a public hearing is held, the director will approve or disapprove the proposed permit based on information in the permit application and information submitted at the hearing.

Para obtener más información sobre esta solicitud en español, sírvase comunicarse por favor: New Mexico Energy, Minerals and Natural Resources Department (Depto. Del Energia, Minerales y Recursos Naturales de Nuevo México), Oil Conservation Division (Depto. Conservación Del Petróleo), 1220 South St. Francis Drive, Santa Fe, New Mexico (Contacto: Dorothy Phillips, 505-476-3461)

Under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 31st day of January 2008.

STATE OF NEW
MEXICO
OIL CONSERVATION
DIVISION


SEAL
Mark Fesmire,
Director

Chavez, Carl J, EMNRD

From: Sanchez, Jr., Louis [lsanchez@keyenergy.com]
Sent: Thursday, March 06, 2008 2:13 PM
To: Chavez, Carl J, EMNRD
Subject: BW-19 - Proof of public notice
Attachments: Newspaper Print and Affidavit.pdf

Carl-

Attached you will find a copy of the public notice for the discharge plan renewal for BW-19 along with an affidavit from the Carlsbad Current Argus. If you need a hard copy mailed in please let me know and I will send it your way. Thanks Carl.

 **Louis Sanchez | Key Energy Services, Inc.**
| Corporate Environmental Specialist II
| 6 Desta Drive, ste. 4400, Midland, TX 79705
| o: 432.571.7382 | c: 432.230.7926 | e:lsanchez@keyenergy.com

This inbound email has been scanned by the MessageLabs Email Security System.

Confidentiality Notice: This e-mail, including all attachments is for the sole use of the intended recipient (s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited unless specifically provided under the New Mexico Inspection of Public Records Act. If you are not the intended recipient, please contact the sender and destroy all copies of this message. -- This email has been scanned by the Sybari - Antigen Email System.

3/6/2008

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

April Hernandez, being first duly sworn,
on oath says:

That she is HR Manager of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

February 15, 2008

That the cost of publication is \$ 344.46 that Payment Thereof has been made and will be assessed as court costs.

April Hernandez

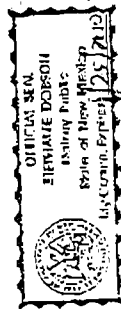
Subscribed and sworn to before me this

18 day of February, 2008

Stephanie Dorson

My commission Expires on 1/25/2010

Notary Public



PUBLIC NOTICE	NOTIFICACION PUBLICA
<p>LEY: Eddy, Services, Inc., 6 Dues, Hwy, Sta. 400, Midland, Texas 79701, has executed a record affidavit with the New Mexico State, County of Eddy, and the County of Eddy, to publish the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:</p> <p>February 15, 2008</p> <p>That the cost of publication is \$ 344.46 that Payment Thereof has been made and will be assessed as court costs.</p> <p><i>April Hernandez</i></p> <p>Subscribed and sworn to before me this</p> <p>18 day of February, 2008</p> <p><i>Stephanie Dorson</i></p> <p>My commission Expires on 1/25/2010</p> <p>Notary Public</p>	<p>LEY: Eddy, Services, Inc., 6 Dues, Hwy, Sta. 400, Midland, Texas 79701, ha presentado un patron de la estadística al New Mexico State, County of Eddy, and the County of Eddy, para publicar el Carlsbad Current-Argus, un periódico publicado diariamente en la Ciudad de Carlsbad, en el condado de Eddy, estado de Nuevo México y de circulación general pagada en dicho condado; que el mismo es un periódico calificado de acuerdo a las leyes del Estado en el que se publican los avisos legales y los avisos publicitarios; que el aviso impreso adjunto fue publicado en la edición regular y completa del periódico y no en un suplemento el día de la siguiente manera:</p> <p>Febrero 15, 2008</p> <p>Analizando el costo de publicación de \$ 344.46 que el pago de la misma ha sido hecho y será evaluado como costo de corte.</p> <p><i>April Hernandez</i></p> <p>Subscrito y jurado ante mí el día</p> <p>18 día de Febrero, 2008</p> <p><i>Stephanie Dorson</i></p> <p>Mi comisión expira el 1/25/2010</p> <p>Notario Público</p>



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.

Director

Oil Conservation Division

January 31, 2008

Mr. Louis Sanchez
Key Energy Services, Inc.
6 Desta Drive, Suite 4400
Midland, Texas 79705

**Re: Discharge Plan Renewal of Permit (BW-019)
Key Energy Services, Inc.
Class III Brine Well
City of Carlsbad Well No. 001, API No. 30-015-21842
2,420 FNL and 330 FEL UL: H Section 36, T 22 S, R 26 E
Eddy County, New Mexico**

Dear Mr. Sanchez:

The New Mexico Oil Conservation Division (NMOCD) has received Key Energy Services, Inc.'s renewal application for the "City of Carlsbad Well No. 001" brine well to inject fresh water and extract 10 pound brine water from the Salado Formation at a daily rate of 650 barrels per day and at a maximum injection pressure of 213 psig. The Class III brine well is located approximately 2 miles south of Carlsbad, New Mexico, and 0.5 mile east on Hwy. 62/180. The initial and subsequent submittals provided the required information in order to deem the renewal application "administratively" complete.

Therefore, the New Mexico Water Quality Control Commission regulations (WQCC) notice requirements of 20.6.2.3108 NMAC must be satisfied and demonstrated to the NMOCD. NMOCD will provide public notice pursuant to the WQCC notice requirements of 20.6.2.3108 NMAC to determine if there is any public interest.

Please contact me at (505) 476-3491 or carlj.chavez@state.nm.us if you have questions. Thank you for your cooperation during this discharge permit review.

Sincerely,

Carl J. Chavez
Environmental Engineer

CJC/cjc

xc: OCD District Office



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.

Director

Oil Conservation Division

August 14, 2007

Mr. Dan Gibson
Key Energy Services, LLC
6 Desta Drive, Suite 4400
Midland, Texas 79705

Re: Key Energy Services, LLC, Brine Well Discharge Plan (BW-019)
City of Carlsbad Well #1 (API# 30-015-21842)
UL:H 36-22S-36E, Eddy County

Dear Mr. Gibson:

The New Mexico Oil Conservation Division (OCD), Environmental Bureau (EB) has confirmed that your discharge plan is currently expired and without a permit. This is a violation of your discharge plan permit and is subject to penalties under 20.6.2 NMAC.

Therefore, the EB hereby requests that you submit a discharge plan renewal application with \$100.00 filing fee (check made payable to the "Water Quality Management Fund") by September 17, 2007. Along with your application, you will need to address the attached 20.6.2.3108 NMAC Public Notice provisions for administrative completeness.

In addition, the OCD is upgrading the minimum bond amount to \$50,000.00 for Class I and III Wells effective January 1, 2008. Our current bond record for your brine well indicates that it satisfies the \$50,000.00 bond amount. Our bond record for your well currently indicates the following:

Bond: RLB0003249; \$50000.00; 6/01/01; RLI Insurance Company

Please contact me at (505-476-3491) or E-mail carlj.chavez@state.nm.us if you have questions.
Thank you.

Sincerely,

Mr. Carl J. Chavez

UIC Quality Assurance/Quality Control Officer

xc: OCD District Office

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR BRINE EXTRACTION FACILITIES

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal

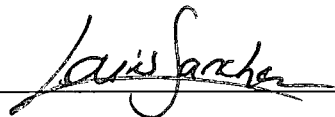
- I. Facility Name: Key Energy Services, Inc. City of Carlsbad #1 Brine Station (BW-019)
- II. Operator: Yale E. Key Inc. dba Key Energy Services Inc.
Address: 6 Desta Drive, Suite 4400, Midland, TX 79705
Contact Person: Mr. Louis Sanchez Phone: 432-571-7382
- III. Location: SE /4 NE /4 Section 36 Township 22S Range 26E
Submit large scale topographic map showing exact location.
- IV. Attach the name and address of the landowner of the facility site.
- V. Attach a description of the types and quantities of fluids at the facility.
- VI. Attach a description of all fluid transfer and storage and fluid and solid disposal facilities.
- VII. Attach a description of underground facilities (i.e. brine extraction well).
- VIII. Attach a contingency plan for reporting and clean-up of spills or releases.
- IX. Attach geological/hydrological evidence demonstrating that brine extraction operations will not adversely impact fresh water.
- X. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
- XI. CERTIFICATION:

I hereby certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Name: Louis Sanchez

Title: Corporate Env. Specialist

Signature: _____



Date: _____

9/13/07

E-mail Address: lsanchez@keyenergy.com

Attachments for Discharge Plan Application

Key Energy Services, Inc., City of Carlsbad #1 Brine Station (BW-019)
2 Miles South of Carlsbad, ½ Mile East of U.S. Highway 62/180
Carlsbad, NM 88220

I. Name of Facility

Key Energy Services, Inc. City of Carlsbad #1 Brine Station (BW-019)

II. Name of Operator or Legally Responsible Party and Local Representative

Yale E. Key Inc. dba Key Energy Services Inc.
6 Desta Drive, Suite 4400
Midland, TX 79705

Local Manager:
Mark Perry
(505) 885-2053

III. Location of Facility

The site is located approximately two miles south of Carlsbad and a half mile east of U.S. Highway 62/180 within the southeast quarter of the northeast quarter of Section 36 in Township 22 South, Range 26 East in Eddy County, New Mexico. Figure 1 shows the approximate location of the facility on the U.S.G.S. topographic map of Otis (1985) New Mexico.

IV. Landowner of the Facility Site

Weldon Stafford Revocable Trust
1319 Doepp Drive
Carlsbad, NM 88220

V. Description of Types and Quantities of Fluids Stored or Used at the Facility

The facility currently stores approximately 2,000 barrels of 10 pound brine water, 2,000 barrels of freshwater, and up to 210 barrels of brine wastewater and rainwater collected from the loading pad drain. There are five (5), fiberglass, brine water storage tanks and four (4), fiberglass, freshwater storage tanks of 500 barrel capacity each, resulting in a brine water storage capacity of 2,500 barrels and a freshwater storage capacity of 2,000 barrels. There is one (1) fiberglass catch tank of 210 barrel capacity. The freshwater is obtained from the City of Carlsbad, and the brine water is obtained from the brine water extraction well associated with the facility. Approximately 2 to 3 loads (110 barrels per load) of brine water are produced on a daily basis. The storage locations of these fluids are depicted in Figure 2.



VI. Description of Fluid Transfer and Storage

A. There are five (5) brine water storage tanks of 500 barrel capacity each, four (4) freshwater storage tanks of 500 barrel capacity each, and one (1) catch tank of 210 barrel capacity located aboveground at the site. The freshwater is provided by the City of Carlsbad and runs through a buried, 4-inch diameter fiberglass pipeline from the pump house to the brine water extraction well. A 4-inch diameter fiberglass pipeline carries the brine water from the well to the aboveground brine water storage tanks. The pipeline is buried approximately 3 to 4 feet below ground surface and was installed approximately two (2) years ago. The water circulates through the pipelines with low level pressure (less than 100 pounds per square inch). Provided as Figure 2 is the fluid flow schematic for the facility. The transfer/storage/disposal methods are described below:

1. Tank and Chemical Storage Area (constructed in 2005): The five (5) 500 barrel capacity brine water storage tanks are interconnected creating a combined volume of 2,500 barrels of brine storage capacity. There is one (1) 210 barrel capacity catch tank used to store brine wastewater and rainwater collected in the loading pad drain. The storage tanks and catch tank are surrounded by a secondary containment berm that measures approximately 130 feet by 60 feet and approximately 3 feet in height and is lined with an impervious engineered liner. Based on these approximations, the bermed area can contain approximately 5,500 barrels of fluid.
2. Surface Impoundments (constructed in 2005): There is one (1) curbed, concrete loading area that contains a drain and a small sump to catch runoff from brine loading and unloading activities, as well as rainwater. The loading area slopes towards the metal drain, which flows to the sump.
3. Leach Fields: No leach fields are present at the facility.
4. Solids Disposal: There are no solids/sludges that accumulate at the facility.

B. For each of the transfer/storage/disposal methods listed above:

1. Tank and Chemical Storage Area:
 - i. Groundwater is protected from brine water seepage by an impervious liner within the brine water storage tank area.
 - ii. The location and design of the site and the methods available for sampling and for measurement/calculation of flow are on file with the NMOCD in Santa Fe.
 - iii. The site is equipped with an alarm system that detects overflow of the brine water storage tanks.



2. Surface Impoundments:

- i. The transfer point is contained over a curbed, concrete area, which has a drain and a sump to catch all runoff.
- ii. The location and design of the site and the methods available for sampling and for measurement/calculation of flow are on file with the NMOCD in Santa Fe.
- iii. The site is equipped with an alarm system that detects overflow of the sump catch tank.

3. Leach Fields: No leach fields are present at the facility.

4. Solids Disposal: There are no solids/sludges that accumulate at the facility.

C. Off-Site Disposal

Brine wastewater and rainwater collected in the drain of the loading pad are stored in a sump catch tank of 210 barrel capacity. Approximately two (2) times per year, the brine wastewater and rain water from the tank are hauled off-site by Key Energy and shipped to the Key Energy BKE SWD facility on Roberson Road in Carlsbad, New Mexico for ultimate disposal. Key Energy is a licensed waste hauler.

D. Proposed Modifications

No modifications to the facility are proposed at this time.

E. Underground Piping

The facility utilizes underground piping that was installed approximately two (2) years ago. The piping is constructed of 4-inch diameter fiberglass with a protective wrap and an interior coating to prevent corrosion. The piping transports freshwater from the freshwater storage tanks to the brine water extraction well, and from the brine water extraction well to the brine water storage tanks. The water circulates through the pipelines with low level pressure (less than 100 pounds per square inch).

F. Inspection, Maintenance and Reporting

1. The facility is inspected on a daily basis by drivers and supervisors. Quarterly inspections are performed by a supervisor and documented deficiencies/violations are kept on file. A copy of the most recent quarterly inspection is provided as Appendix A. Spills and releases at the facility will be reported to the OCD, as required.
2. Groundwater monitoring wells are not present at the facility, therefore, no inspection or maintenance of groundwater monitoring wells is required.



3. Please refer to Key Energy Services' SPCC and SWPP plans, which discuss general procedures for containment of precipitation and runoff, and includes information on curbing, drainage, disposition, notification, etc.
4. The tanks and piping located at the facility are inspected by Key Energy employees on a routine basis. The site is also equipped with an alarm system that detects overflow of the tanks. For details on procedures to be undertaken if significant leaks are detected, please refer to Key Energy's Emergency Contingency Plan, provided as Appendix C.
5. General Closure Plan:
 - i. All fluids will be removed and transported to an appropriate OCD-approved facility. Equipment will be dismantled and removed from the site. The brine water storage tank liner system will be inspected for breaches and will be removed. Confirmation samples will be collected beneath the former brine water storage tanks, and beneath any subsurface features (drains and sumps).
 - ii. The facility will be graded to as close to the original contour as is practical, including removing secondary containment berms.
 - iii. Fluids, sludges and solids will be properly disposed pursuant to rules and regulations in effect at the time of closure.

VII. Brine Extraction Well

There is one brine water extraction well (City of Carlsbad #1) associated with the facility. The total depth of the well is 764.15 feet below ground surface. The well consists of 350 feet of 8 ⁵/₈ inch diameter casing, followed by 710 feet of 5 ¹/₂ inch diameter casing. There is 764 feet of 2 ⁷/₈ inch diameter metal pipe that goes through the casing. Freshwater from the City of Carlsbad is pumped through the casing and circulates through an underground salt cavern. The water then circulates back up the well piping for collection. A diagram of the brine water extraction well is included as Appendix B.

A. Drilling, Deepening, or Plug Back Operations

No modifications to the brine extraction well are anticipated at this time. However, should modifications to the brine extraction well become necessary in the future, Key Energy Services will file the following plans, specifications, and pertinent documents with the OCD 90 days prior to start-up of the planned operation.

1. Form C-101 "Application for Permit to Drill, Deepen, or Plug Back" (OCD Rule 1101).



2. A map showing the number, name, and location of all producing oil and gas wells, injection wells, abandoned holes, surface bodies of water, watercourses, springs, mines, quarries, water wells, and other pertinent surface features within ¼ mile from the wellbore(s).
3. Maps and cross-sections indicating the general vertical and lateral limits of all groundwater having 10,000 mg/L or less total dissolved solids (TDS) within one mile of the site. The maps will show the position of such groundwater within this area relative to the injection formation, and will indicate the direction of water movement, where known, for each zone of groundwater.
4. A list all abandoned wells/shafts or other conduits in the area of review that penetrate the injection zone, identifying those which may provide a pathway for migration of contaminant through being improperly sealed, completed or abandoned. Details regarding what correction action will be taken prior to start up of operations to prevent any movement of contaminants into groundwater of less than/equal to 10,000 mg/L TDS through such conduits due to the proposed injection activity (e.g. plugging open holes) will be provided. Completion and plugging records will also be included.

If information becomes available after operations have begun, which indicates the presence of a conduit that will require plugging, then the injection pressure will be limited to avoid movement of contaminants through such a conduit into protected groundwater.

5. Maps and cross-sections detailing the geology and geologic structure of the local area.
6. A proposed formation testing program to obtain an analysis or description of fluids in the receiving formation.
7. Schematic drawings of the surface and subsurface construction details.
8. Proposed drilling, evaluation, and testing programs, including logging procedures, coring program, and deviation checks.
9. Proposed stimulation, injection, and operation procedures with respect to WQCC 5-206 limitations.
10. Submittal of a plan for plugging and abandonment of the well that meets the requirements of WQCC regulations section 5-209. **A plugging bond pursuant to OCD Rule 101, as required, will be submitted prior to commencement of any new well drilling operations.**



B. Workover Operations

Before performing remedial work, altering or pulling casing, plugging or abandonment, or any other workover, approval of OCD will be obtained by Key Energy. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103-A).

C. Additional Information Required with Discharge Plan

The following information is on file with the NMOCD in Santa Fe, New Mexico and is available online at the OCD website:

- Evaluation, completion and well workover information
- The proposed maximum and average injection pressures and injection volume
- A proposed mechanical integrity testing program
- An analysis of the injection fluid and brine
- A comparison of volumes of freshwater injected to the volume of brine to detect underground losses
- Submittal of a quarterly report listing, by month, the volume of fluids injected and produced
- Information on the size and extent of the solution cavern
- Geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence or catastrophic collapse

VIII. Spill/Leak Prevention and Reporting Procedures (Contingency Plans)

Key Energy's Emergency Contingency Plan is provided as Appendix C.

IX. Site Characteristics

A. As required by OCD Guidelines, the following hydrologic/geologic information is provided:

1. According to the U.S.G.S. topographic map of Otis, New Mexico (1985), no apparent bodies of water, streams, or other watercourses (arroyos, canals, drains, etc.), or groundwater discharge sites (seeps, springs, marches, swamps), are located within one mile of the outside perimeter of the facility.

According to the New Mexico Office of the State Engineer's WATERS Database, there are no water wells (e.g. public supply, domestic, stock, etc.) within one-quarter mile of the facility.

2. According to the New Mexico Office of the State Engineer's WATERS Database, groundwater within a one mile radius of the facility is encountered at depths of 60 to 149 feet below ground surface (bgs) in wells completed to



depths of 130 to 225 feet bgs. Information regarding water quality in these wells was not available.

3. Available information and reference sources for geology and geohydrology of the facility site as provided below:

- a. According to the Natural Resources Conservation Service Web Soil Survey, the facility is located on Reagan loam with 0 to 3% slopes and 0 to 1% slopes. A summary of this soil type is provided as Appendix D.
- b. According to the New Mexico Office of the State Engineer's WATERS Database, shallow groundwater in the area is obtained from alluvial sediments. The aquifer that provides the water for the City of Carlsbad is the Capitan Reef aquifer.
- c. According to the Carlsbad Region, New Mexico and West Texas, New Mexico Geological Society, Forty-Fourth Annual Field Conference (1993), the aquifer is comprised of siltstones, sandstones, massive limestones, dolomites, and interbedded evaporites.
- d. According to the Carlsbad Region, New Mexico and West Texas, New Mexico Geological Society, Forty-Fourth Annual Field Conference (1993), the thickness of the Permian Dewey Lake mudstones and sandstones, which underlies the alluvial sediments, is reportedly approximately 560 feet. No information regarding the thickness of the overlying alluvial material was identified.

4. Information on flooding potential and flood protection measures:

- a. Based on the topographic positioning of the facility and the lack of nearby watercourses and groundwater discharge sites, the flooding potential at the discharge site, with respect to major precipitation and/or runoff events, appears minimal.
- b. Flood protection measures at the facility include berms to keep potential floodwaters out.

B. Additional Information

There is no additional information.

X. Other Compliance Information

See attached Appendices.



5317307
08-07

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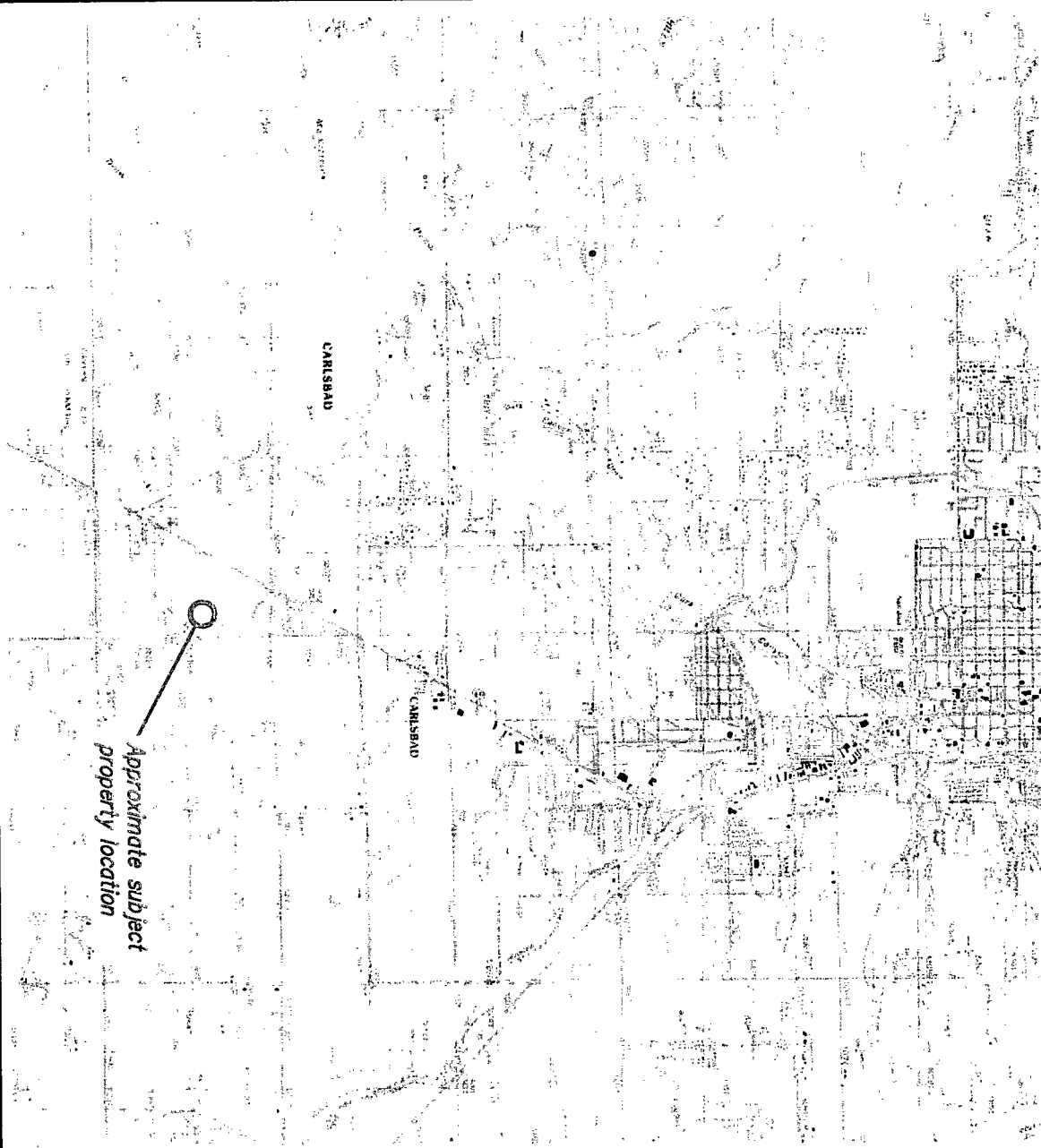
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Approved: _____ D/E



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Site Location Map
Key Energy Discharge Plan BW-019
Carlsbad, New Mexico

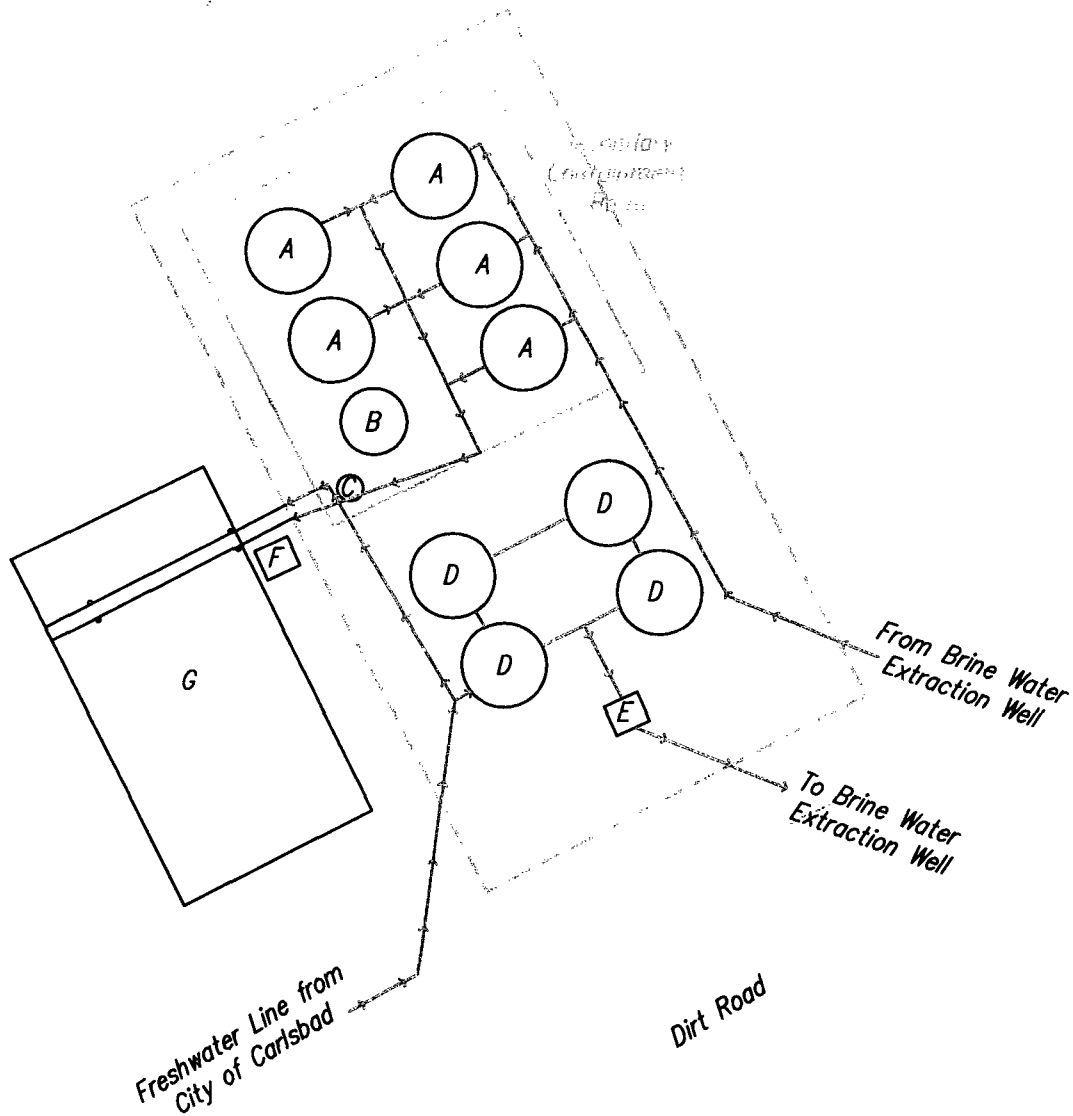
Figure 1




Note:
Base maps are the Carlsbad East (1985), Carlsbad West (1985), Otis (1985) and Kitchen Cove (1985), New Mexico USGS 7.5 minute series topographic maps

0 2,500 5,000
Scale: 1"=5,000'






N
 Not to Scale

- | | |
|--------------------|--|
| A Brine Water Tank | E Pump Shed |
| B Catch Tank | F Meter House |
| C Sump | G Concrete Loading Pad with Drain and Loading Valves |
| D Freshwater Tank | |

Figure 2

Facility and Fluid Flow Diagram
Key Energy Discharge Plan BW-019
Carlsbad, New Mexico

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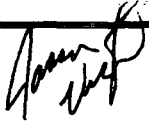

Appendix A: Quarterly Inspection Checklist



Souder, Miller & Associates
Civil/Environmental Scientists & Engineers

STORM WATER POLLUTION PREVENTION PLAN
QUARTERLY INSPECTION CHECKLIST
 2nd ~~1st~~ QUARTER June, 2007

Inspector	Inspection Frequency	Date	Area Inspected	Items to Inspect	Observation	Corrective Action Recommended
Jason West	Quarterly	6-21-07	Brine and Freshwater Tanks	Integrity of Tanks, Foundations, Piping and Supports	Good	
				Tank Valves Closed	Yes	
				Tank Labeled with Contents		
				Releases from Tank		
				Housekeeping	Good	
				Accumulated Liquids Observed for Sheen, Solids		
Jason West	Quarterly	6-21-07	Spill Response Equipment	Spill Response Drums in Correct Locations On Site	None	need to order drum and put in place.
				Drums Labeled as Spill Response Equipment	N/A	
				Fire Extinguishers in Correct Locations On Site	yes	

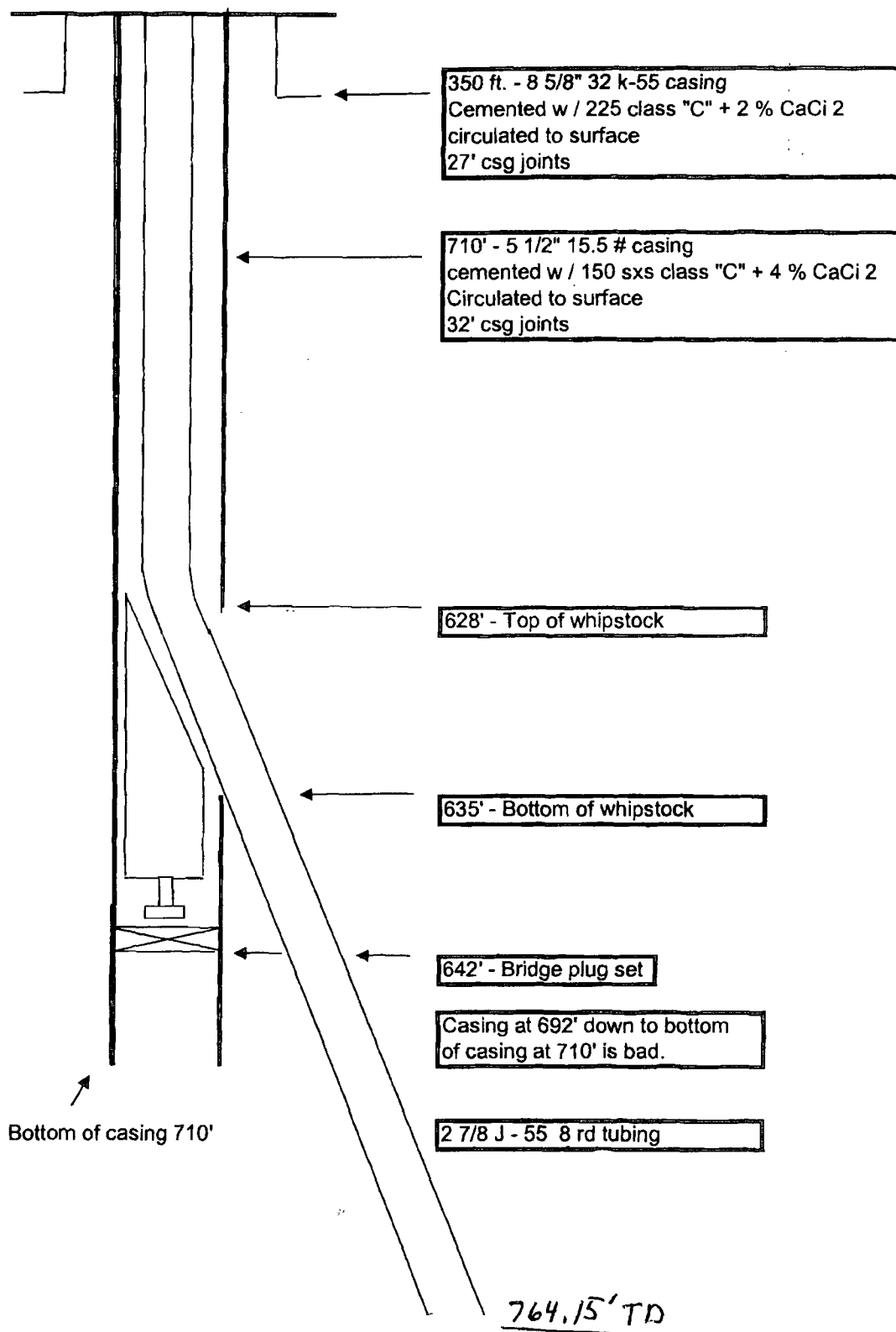
Inspector	Inspection Frequency	Date	Area Inspected	Items to Inspect	Observation	Corrective Action Recommended
	Quarterly	6-21-07	Truckers 1 Brine Station facility Property	Housekeeping	Good	
				Lighting	Good	
	Quarterly	6-21-07	Visual Observation of Any Standing Storm Water	Evidence of a Release	None	
	Quarterly		Previous Quarter Inspection Checklist	Status of Corrective Actions Recommended		

* If any actions recommended for deficiencies that could impact releases to storm water, a work order must be completed and a copy attached to this checklist.

Appendix B: Diagram of Brine Extraction Well



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Appendix C: Key Energy's Emergency Contingency Plan



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BUSINESS EMERGENCY CONTINGENCY PLAN

for

CARLSBAD BRINE STATION #1

Prepared by:

Key Energy Services, Inc.
6 Desta Drive, Suite 4400
Midland, Texas 79705
432 571-7536
432 571-7173

Daniel K. Gibson, P.G.
Corporate Environmental Manager
Louis Sanchez
Corporate Environmental Specialist II

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Name of Facility

Carlsbad Brine Station #1

Type of Facility

Brine and Water Station

Location of Facility

2 miles south of Carlsbad and ½ mile east of U.S. Highway 62/180 in Eddy County, New Mexico.

Latitude and Longitude

32° 20' 56.4" - 104° 14' 16.4"

SIC Code

1389

Name and Address of Owner/Operator

Key Energy Services, LLC
6 Desta Drive, Suite 4400
Midland, Texas 79705
(432) 571-7536

Designated Person Accountable for Oil Spill Prevention at Facility

Mark Perry
(505) 885-2053 ~ office
(505) 706-0230 ~ cell

Alternate

J.D. McCormack
(505) 885-2053 ~ office
(505) 706-0235 ~ office

Reportable Oil Spill Event

There have been no known spill events at this yard in the last three years.

Spill Control Equipment On Site

Absorbent

Fire Extinguishers and Blankets

Shovels, Rakes, and Squeegee

Two-Way Radios

Cellular Telephones

Pagers

Spill Control Equipment If Needed

Vacuum Trucks ~ 70-130 Barrel Capacity

Loaders ~ 3-5 Cubic Yard Capacity

Excavators

Dump Trucks ~ 12-16 Cubic Yard Capacity

Bins ~ 12-40 Cubic Yard Capacity

Motor Grader

Bull Dozer

Emergency Procedures

This contingency plan was developed to address the general procedures to be followed in the event of a spill. The procedures to be followed will be determined by the size of the spill and the requirements of the applicable regulatory agencies.

A. Procedures to be followed in case of a spill:

1. The first employee that notices a spill will evaluate the situation and undertake the following steps in the order deemed most important:
 - a. Shut off the source, if possible without endangering themselves.
 - b. Contain the spill if possible.
 - c. Notify the supervisor and describe the situation accurately. A list of Key's personnel and their telephone numbers are included in this report.
 - d. Continue operations as directed.
2. The supervisor will initiate action according to the report received from the operating employee. The supervisor will make a personal assessment of the problem and take whatever additional steps deemed to be necessary.
3. When the supervisor is assured that all necessary steps have been taken to reduce the danger to the public and/or damage to the property and that sufficient people have been directed toward stopping the source and containing the spill, all appropriate company personnel and governmental agencies will be notified.
4. Continue containment/clean up operations.

B. Containment:

1. Additional containment basins, dikes, or diversionary structure will be constructed.
2. If insufficient equipment and personnel are available at the site, assistance will be required from qualified contractors. A list of local spill containment contractors and equipment are included in this report.
3. Control of the spill can also be provided by the expeditious use of vacuum trucks and other removal methods.
4. Other clean up techniques will be used based on the requirements of the applicable federal, state, and local agencies.

Emergency Response Agencies

Carlsbad

Emergency Fire and Medical 911
Eddy County Oil Conservation Division (OCD) (505) 748-1283
Carlsbad Fire Department (505) 885-3125
Carlsbad Police Department (505) 887-1191

State of New Mexico

New Mexico State Police (505) 392-5588
New Mexico Environmental Department (505) 827-2855
NMOCD (505) 476-3440

Federal

National Response Center (800) 424-8802
National Poison Control Center (800) 942-5969
EPA Region 6 Emergency Response Center (214) 665-6428
Chemtree (800) 424-9300

Local Spill Containment Contractors

SMA
612 E. Murray Dr
Farmington, NM 87401
(505) 325-5667

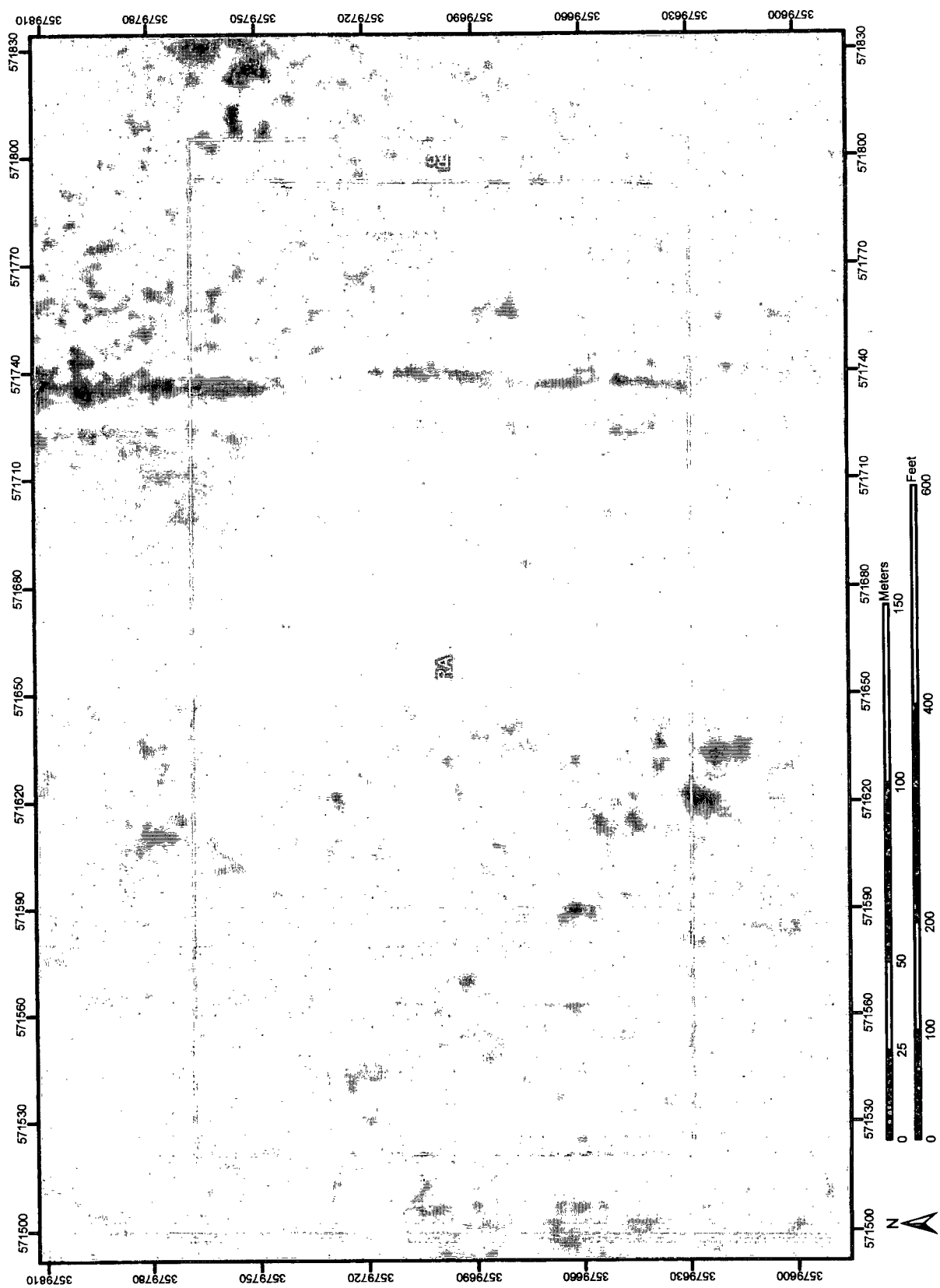
CRA
2135 S. Loop 250 West
Midland, Texas 79703
(432) 686-0086
Emergency Response: (866) 812-9565
CRA contact: Luke D. Markham

Appendix D: Web Soil Survey Map and Description



















































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Civil/Environmental Scientists & Engineers

Soil Map—Eddy Area, New Mexico



MAP LEGEND

	Area of Interest (AOI)		Very Stony Spot
	Area of Interest (AOI)		Wet Spot
	Soils		Other
	Soil Map Units		Special Line Features
	Special Point Features		Gully
	Blowout		Short Sleep Slope
	Borrow Pit		Other
	Clay Spot		Political Features
	Closed Depression		Municipalities
	Gravel Pit		Cities
	Gravelly Spot		Urban Areas
	Landfill		Water Features
	Lava Flow		Oceans
	Marsh		Streams and Canals
	Mine or Quarry		Transportation
	Miscellaneous Water		Ralls
	Perennial Water		Roads
	Rock Outcrop		Interstate Highways
	Saline Spot		US Routes
	Sandy Spot		State Highways
	Severely Eroded Spot		Local Roads
	Sinkhole		Other Roads
	Slide or Slip		
	Sodic Spot		
	Spoil Area		
	Stony Spot		

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 13N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 6, Jan 28, 2007

Date(s) aerial images were photographed: 9/19/1996

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Eddy Area, New Mexico (NM614)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RA	Reagan loam, 0 to 3 percent slopes	9.3	95.8%
Rc	Reagan loam, 0 to 1 percent slopes	0.4	4.2%
Totals for Area of Interest (AOI)		9.7	100.0%

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Eddy Area, New Mexico

Map Unit: RA—Reagan loam, 0 to 3 percent slopes

Component: Reagan (100%)

The Reagan component makes up 100 percent of the map unit. Slopes are 0 to 3 percent. This component is on alluvial fans, uplands. The parent material consists of alluvium and/or eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R042XC007NM Loamy ecological site. Nonirrigated land capability classification is 6e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 30 percent. The soil has a slightly saline horizon within 30 inches of the soil surface.

Map Unit: Rc—Reagan loam, 0 to 1 percent slopes

Component: Reagan (100%)

The Reagan component makes up 100 percent of the map unit. Slopes are 0 to 1 percent. This component is on alluvial fans, uplands. The parent material consists of alluvium and/or eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R042XC007NM Loamy ecological site. Nonirrigated land capability classification is 6c. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 30 percent. The soil has a slightly saline horizon within 30 inches of the soil surface.

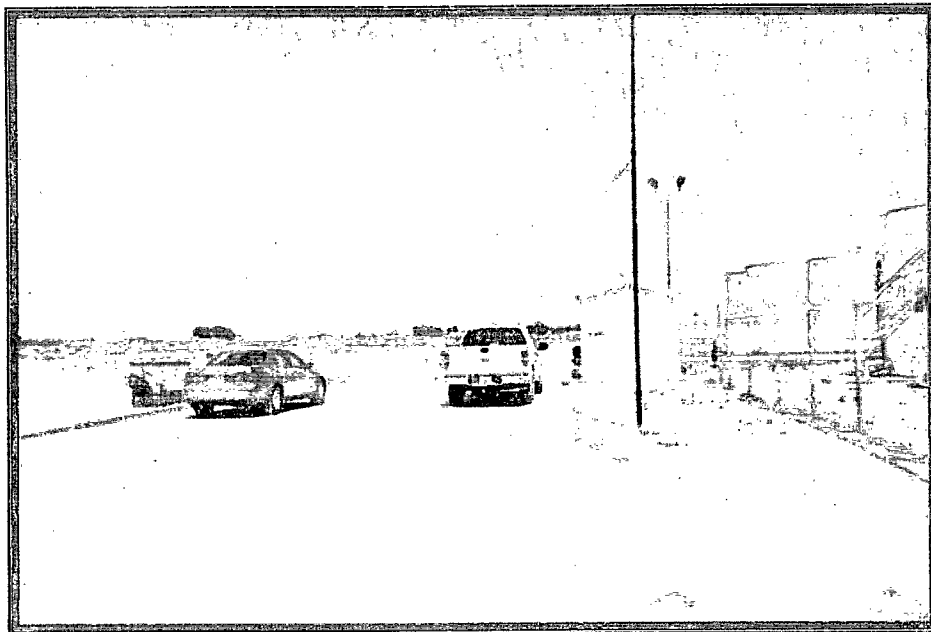
Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 6, Jan 28, 2007

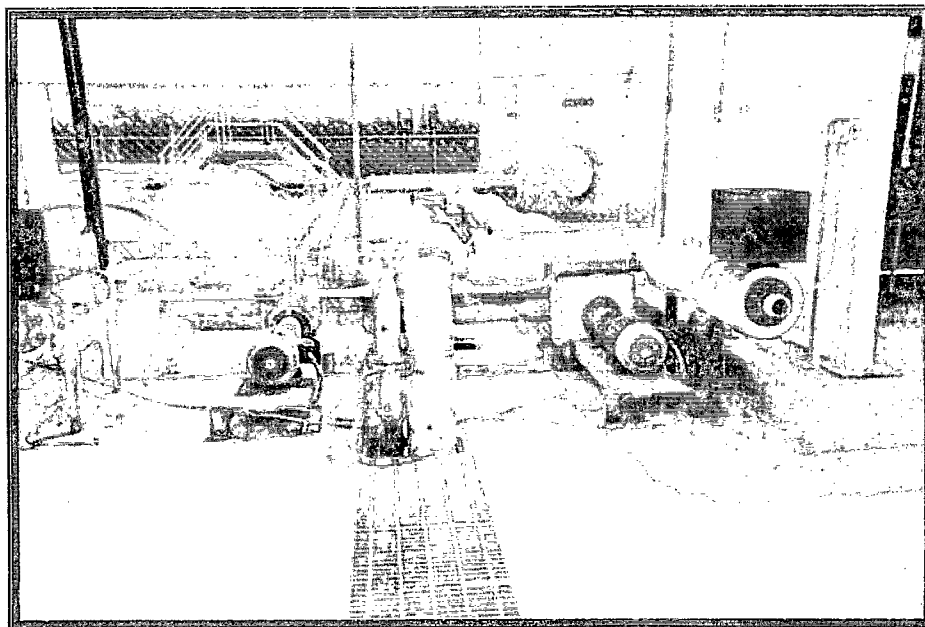
Appendix E: Photographs

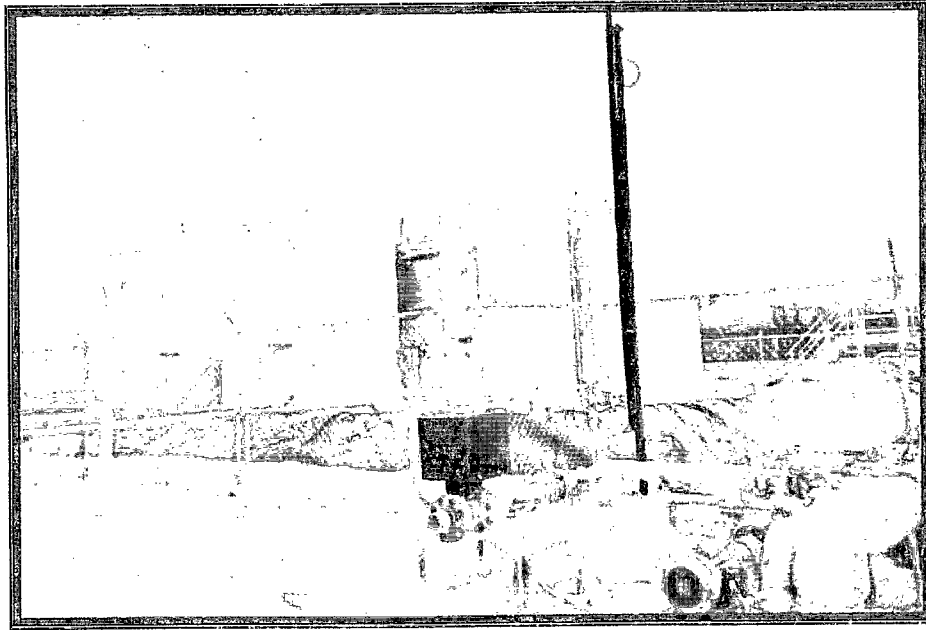


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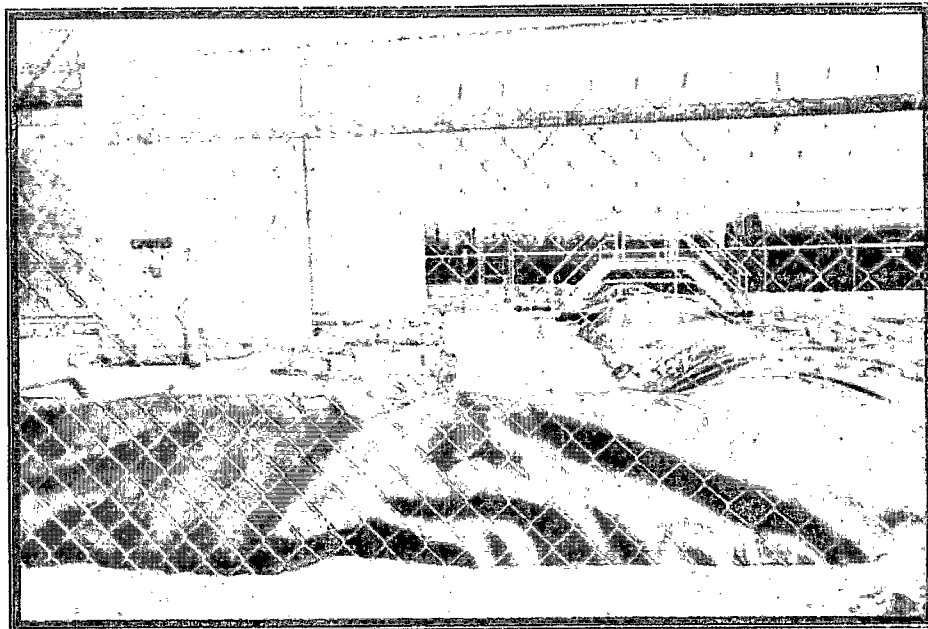


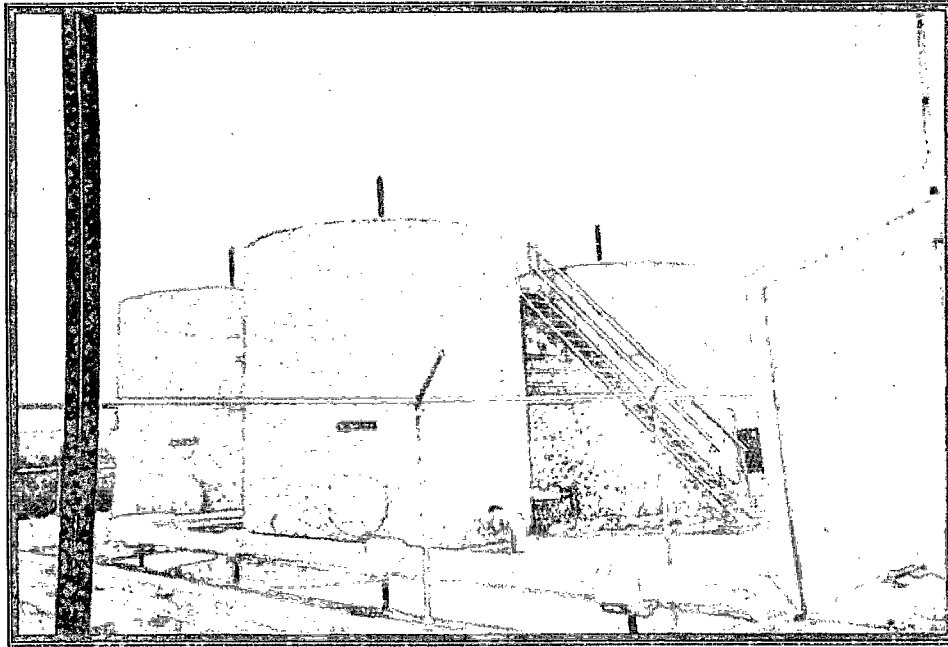
Above: Curbed concrete loading pad on the property
Below: Drain piping on the property





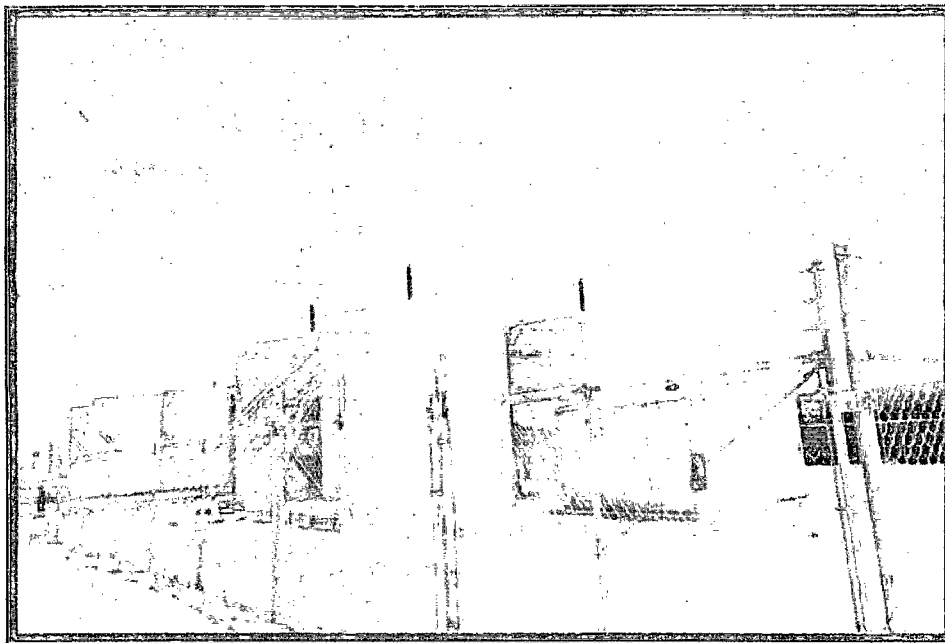
Above: Brine water storage tanks and catch tank on the property
Below: Berm surrounding the tanks and the sump on the property





Above: Freshwater storage tanks on the property

Below: Looking across the facility at the storage tanks and pump house on the property





Key Energy Services
6 Desta Drive
Suite 4400
Midland, Texas 79705

Telephone: 432.571.7382
Facsimile: 432.571.7173
www.keyenergy.com

September 13, 2007

State of New Mexico
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Discharge Plan Renewal (BW-019)

To Whom It May Concern:

Enclosed you will find the Discharge Plan Renewal for Key's brine station located near Carlsbad. I have also enclosed Key's check for \$100.00 for the renewal fee.

If you need anything else, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Louis Sanchez". The signature is fluid and cursive, with the first name "Louis" and last name "Sanchez" clearly distinguishable.

Louis Sanchez

Enclosure

cc: Mr. Mark Perry
Key Energy Services, Inc.
1609 E. Greene Street
Carlsbad, New Mexico 88220

ACKNOWLEDGEMENT OF RECEIPT
OF CHECK/CASH

I hereby acknowledge receipt of check No.

dated 9/14/07

or cash received on in the amount of \$ 100⁰⁰

from Key Energy Services

for BW-019

Submitted by: Lawrence Romero Date: 9/19/07

Submitted to ASD by: Lawrence Romero Date: 9/19/07

Received in ASD by: Lawrence Romero Date: 9/19/07

Filing Fee ✓ New Facility Renewal

Modification Other

Organization Code 521.07 Applicable FY 2004

To be deposited in the Water Quality Management Fund.

Full Payment or Annual Increment

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR BRINE EXTRACTION FACILITIES

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal

- I. Facility Name: Key Energy Services, Inc. City of Carlsbad #1 Brine Station (BW-019)
- II. Operator: Yale E. Key Inc. dba Key Energy Services Inc.
Address: 6 Desta Drive, Suite 4400, Midland, TX 79705
Contact Person: Mr. Louis Sanchez Phone: 432-571-7382
- III. Location: SE /4 NE /4 Section 36 Township 22S Range 26E
Submit large scale topographic map showing exact location.
- IV. Attach the name and address of the landowner of the facility site.
- V. Attach a description of the types and quantities of fluids at the facility.
- VI. Attach a description of all fluid transfer and storage and fluid and solid disposal facilities.
- VII. Attach a description of underground facilities (i.e. brine extraction well).
- VIII. Attach a contingency plan for reporting and clean-up of spills or releases.
- IX. Attach geological/hydrological evidence demonstrating that brine extraction operations will not adversely impact fresh water.
- X. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
- XI. CERTIFICATION:

I hereby certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Name: Louis Sanchez

Title: Corporate Env. Specialist

Signature: _____



Date: _____

9/13/07

E-mail Address: lsanchez@keyenergy.com

Attachments for Discharge Plan Application

Key Energy Services, Inc., City of Carlsbad #1 Brine Station (BW-019)
2 Miles South of Carlsbad, ½ Mile East of U.S. Highway 62/180
Carlsbad, NM 88220

I. Name of Facility

Key Energy Services, Inc. City of Carlsbad #1 Brine Station (BW-019)

II. Name of Operator or Legally Responsible Party and Local Representative

Yale E. Key Inc. dba Key Energy Services Inc.
6 Desta Drive, Suite 4400
Midland, TX 79705

Local Manager:
Mark Perry
(505) 885-2053

III. Location of Facility

The site is located approximately two miles south of Carlsbad and a half mile east of U.S. Highway 62/180 within the southeast quarter of the northeast quarter of Section 36 in Township 22 South, Range 26 East in Eddy County, New Mexico. Figure 1 shows the approximate location of the facility on the U.S.G.S. topographic map of Otis (1985) New Mexico.

IV. Landowner of the Facility Site

Weldon Stafford Revocable Trust
1319 Doepp Drive
Carlsbad, NM 88220

V. Description of Types and Quantities of Fluids Stored or Used at the Facility

The facility currently stores approximately 2,000 barrels of 10 pound brine water, 2,000 barrels of freshwater, and up to 210 barrels of brine wastewater and rainwater collected from the loading pad drain. There are five (5), fiberglass, brine water storage tanks and four (4), fiberglass, freshwater storage tanks of 500 barrel capacity each, resulting in a brine water storage capacity of 2,500 barrels and a freshwater storage capacity of 2,000 barrels. There is one (1) fiberglass catch tank of 210 barrel capacity. The freshwater is obtained from the City of Carlsbad, and the brine water is obtained from the brine water extraction well associated with the facility. Approximately 2 to 3 loads (110 barrels per load) of brine water are produced on a daily basis. The storage locations of these fluids are depicted in Figure 2.



VI. Description of Fluid Transfer and Storage

A. There are five (5) brine water storage tanks of 500 barrel capacity each, four (4) freshwater storage tanks of 500 barrel capacity each, and one (1) catch tank of 210 barrel capacity located aboveground at the site. The freshwater is provided by the City of Carlsbad and runs through a buried, 4-inch diameter fiberglass pipeline from the pump house to the brine water extraction well. A 4-inch diameter fiberglass pipeline carries the brine water from the well to the aboveground brine water storage tanks. The pipeline is buried approximately 3 to 4 feet below ground surface and was installed approximately two (2) years ago. The water circulates through the pipelines with low level pressure (less than 100 pounds per square inch). Provided as Figure 2 is the fluid flow schematic for the facility. The transfer/storage/disposal methods are described below:

1. Tank and Chemical Storage Area (constructed in 2005): The five (5) 500 barrel capacity brine water storage tanks are interconnected creating a combined volume of 2,500 barrels of brine storage capacity. There is one (1) 210 barrel capacity catch tank used to store brine wastewater and rainwater collected in the loading pad drain. The storage tanks and catch tank are surrounded by a secondary containment berm that measures approximately 130 feet by 60 feet and approximately 3 feet in height and is lined with an impervious engineered liner. Based on these approximations, the bermed area can contain approximately 5,500 barrels of fluid.
2. Surface Impoundments (constructed in 2005): There is one (1) curbed, concrete loading area that contains a drain and a small sump to catch runoff from brine loading and unloading activities, as well as rainwater. The loading area slopes towards the metal drain, which flows to the sump.
3. Leach Fields: No leach fields are present at the facility.
4. Solids Disposal: There are no solids/sludges that accumulate at the facility.

B. For each of the transfer/storage/disposal methods listed above:

1. Tank and Chemical Storage Area:
 - i. Groundwater is protected from brine water seepage by an impervious liner within the brine water storage tank area.
 - ii. The location and design of the site and the methods available for sampling and for measurement/calculation of flow are on file with the NMOCD in Santa Fe.
 - iii. The site is equipped with an alarm system that detects overflow of the brine water storage tanks.



2. Surface Impoundments:

- i. The transfer point is contained over a curbed, concrete area, which has a drain and a sump to catch all runoff.
- ii. The location and design of the site and the methods available for sampling and for measurement/calculation of flow are on file with the NMOCD in Santa Fe.
- iii. The site is equipped with an alarm system that detects overflow of the sump catch tank.

3. Leach Fields: No leach fields are present at the facility.

4. Solids Disposal: There are no solids/sludges that accumulate at the facility.

C. Off-Site Disposal

Brine wastewater and rainwater collected in the drain of the loading pad are stored in a sump catch tank of 210 barrel capacity. Approximately two (2) times per year, the brine wastewater and rain water from the tank are hauled off-site by Key Energy and shipped to the Key Energy BKE SWD facility on Roberson Road in Carlsbad, New Mexico for ultimate disposal. Key Energy is a licensed waste hauler.

D. Proposed Modifications

No modifications to the facility are proposed at this time.

E. Underground Piping

The facility utilizes underground piping that was installed approximately two (2) years ago. The piping is constructed of 4-inch diameter fiberglass with a protective wrap and an interior coating to prevent corrosion. The piping transports freshwater from the freshwater storage tanks to the brine water extraction well, and from the brine water extraction well to the brine water storage tanks. The water circulates through the pipelines with low level pressure (less than 100 pounds per square inch).

F. Inspection, Maintenance and Reporting

1. The facility is inspected on a daily basis by drivers and supervisors. Quarterly inspections are performed by a supervisor and documented deficiencies/violations are kept on file. A copy of the most recent quarterly inspection is provided as Appendix A. Spills and releases at the facility will be reported to the OCD, as required.
2. Groundwater monitoring wells are not present at the facility, therefore, no inspection or maintenance of groundwater monitoring wells is required.



3. Please refer to Key Energy Services' SPCC and SWPP plans, which discuss general procedures for containment of precipitation and runoff, and includes information on curbing, drainage, disposition, notification, etc.
4. The tanks and piping located at the facility are inspected by Key Energy employees on a routine basis. The site is also equipped with an alarm system that detects overflow of the tanks. For details on procedures to be undertaken if significant leaks are detected, please refer to Key Energy's Emergency Contingency Plan, provided as Appendix C.
5. General Closure Plan:
 - i. All fluids will be removed and transported to an appropriate OCD-approved facility. Equipment will be dismantled and removed from the site. The brine water storage tank liner system will be inspected for breaches and will be removed. Confirmation samples will be collected beneath the former brine water storage tanks, and beneath any subsurface features (drains and sumps).
 - ii. The facility will be graded to as close to the original contour as is practical, including removing secondary containment berms.
 - iii. Fluids, sludges and solids will be properly disposed pursuant to rules and regulations in effect at the time of closure.

VII. Brine Extraction Well

There is one brine water extraction well (City of Carlsbad #1) associated with the facility. The total depth of the well is 764.15 feet below ground surface. The well consists of 350 feet of 8 ⁵/₈ inch diameter casing, followed by 710 feet of 5 ¹/₂ inch diameter casing. There is 764 feet of 2 ⁷/₈ inch diameter metal pipe that goes through the casing. Freshwater from the City of Carlsbad is pumped through the casing and circulates through an underground salt cavern. The water then circulates back up the well piping for collection. A diagram of the brine water extraction well is included as Appendix B.

A. Drilling, Deepening, or Plug Back Operations

No modifications to the brine extraction well are anticipated at this time. However, should modifications to the brine extraction well become necessary in the future, Key Energy Services will file the following plans, specifications, and pertinent documents with the OCD 90 days prior to start-up of the planned operation.

1. Form C-101 "Application for Permit to Drill, Deepen, or Plug Back" (OCD Rule 1101).



2. A map showing the number, name, and location of all producing oil and gas wells, injection wells, abandoned holes, surface bodies of water, watercourses, springs, mines, quarries, water wells, and other pertinent surface features within ¼ mile from the wellbore(s).
3. Maps and cross-sections indicating the general vertical and lateral limits of all groundwater having 10,000 mg/L or less total dissolved solids (TDS) within one mile of the site. The maps will show the position of such groundwater within this area relative to the injection formation, and will indicate the direction of water movement, where known, for each zone of groundwater.
4. A list all abandoned wells/shafts or other conduits in the area of review that penetrate the injection zone, identifying those which may provide a pathway for migration of contaminant through being improperly sealed, completed or abandoned. Details regarding what correction action will be taken prior to start up of operations to prevent any movement of contaminants into groundwater of less than/equal to 10,000 mg/L TDS through such conduits due to the proposed injection activity (e.g. plugging open holes) will be provided. Completion and plugging records will also be included.

If information becomes available after operations have begun, which indications the presence of a conduit that will require plugging, then the injection pressure will be limited to avoid movement of contaminants through such a conduit into protected groundwater.

5. Maps and cross-sections detailing the geology and geologic structure of the local area.
6. A proposed formation testing program to obtain an analysis or description of fluids in the receiving formation.
7. Schematic drawings of the surface and subsurface construction details.
8. Proposed drilling, evaluation, and testing programs, including logging procedures, coring program, and deviation checks.
9. Proposed stimulation, injection, and operation procedures with respect to WQCC 5-206 limitations.
10. Submittal of a plan for plugging and abandonment of the well that meets the requirements of WQCC regulations section 5-209. **A plugging bond pursuant to OCD Rule 101, as required, will be submitted prior to commencement of any new well drilling operations.**



B. Workover Operations

Before performing remedial work, altering or pulling casing, plugging or abandonment, or any other workover, approval of OCD will be obtained by Key Energy. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103-A).

C. Additional Information Required with Discharge Plan

The following information is on file with the NMOCD in Santa Fe, New Mexico and is available online at the OCD website:

- Evaluation, completion and well workover information
- The proposed maximum and average injection pressures and injection volume
- A proposed mechanical integrity testing program
- An analysis of the injection fluid and brine
- A comparison of volumes of freshwater injected to the volume of brine to detect underground losses
- Submittal of a quarterly report listing, by month, the volume of fluids injected and produced
- Information on the size and extent of the solution cavern
- Geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence or catastrophic collapse

VIII. Spill/Leak Prevention and Reporting Procedures (Contingency Plans)

Key Energy's Emergency Contingency Plan is provided as Appendix C.

IX. Site Characteristics

A. As required by OCD Guidelines, the following hydrologic/geologic information is provided:

1. According to the U.S.G.S. topographic map of Otis, New Mexico (1985), no apparent bodies of water, streams, or other watercourses (arroyos, canals, drains, etc.), or groundwater discharge sites (seeps, springs, marches, swamps), are located within one mile of the outside perimeter of the facility.

According to the New Mexico Office of the State Engineer's WATERS Database, there are no water wells (e.g. public supply, domestic, stock, etc.) within one-quarter mile of the facility.

2. According to the New Mexico Office of the State Engineer's WATERS Database, groundwater within a one mile radius of the facility is encountered at depths of 60 to 149 feet below ground surface (bgs) in wells completed to



depths of 130 to 225 feet bgs. Information regarding water quality in these wells was not available.

3. Available information and reference sources for geology and geohydrology of the facility site as provided below:

- a. According to the Natural Resources Conservation Service Web Soil Survey, the facility is located on Reagan loam with 0 to 3% slopes and 0 to 1% slopes. A summary of this soil type is provided as Appendix D.
- b. According to the New Mexico Office of the State Engineer's WATERS Database, shallow groundwater in the area is obtained from alluvial sediments. The aquifer that provides the water for the City of Carlsbad is the Capitan Reef aquifer.
- c. According to the Carlsbad Region, New Mexico and West Texas, New Mexico Geological Society, Forty-Fourth Annual Field Conference (1993), the aquifer is comprised of siltstones, sandstones, massive limestones, dolomites, and interbedded evaporites.
- d. According to the Carlsbad Region, New Mexico and West Texas, New Mexico Geological Society, Forty-Fourth Annual Field Conference (1993), the thickness of the Permian Dewey Lake mudstones and sandstones, which underlies the alluvial sediments, is reportedly approximately 560 feet. No information regarding the thickness of the overlying alluvial material was identified.

4. Information on flooding potential and flood protection measures:

- a. Based on the topographic positioning of the facility and the lack of nearby watercourses and groundwater discharge sites, the flooding potential at the discharge site, with respect to major precipitation and/or runoff events, appears minimal.
- b. Flood protection measures at the facility include berms to keep potential floodwaters out.

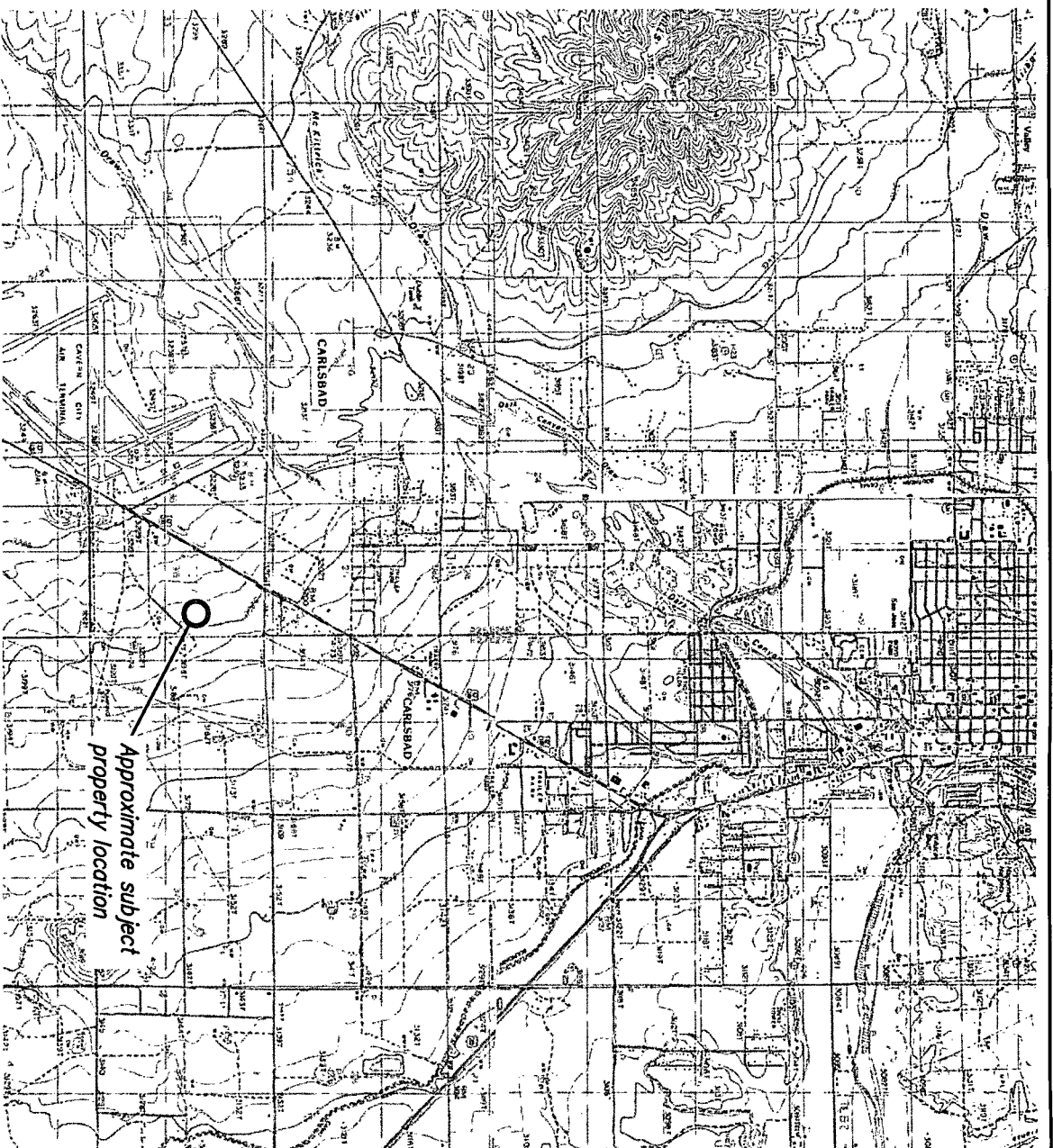
B. Additional Information

There is no additional information.

X. Other Compliance Information

See attached Appendices.





N

0 2,500 5,000

Scale: 1"=5,000'

Note:

Base maps are the Carlsbad East (1985), Carlsbad West (1985), Otis (1985) and Kitchen Cove (1985), New Mexico USGS 7.5 minute series topographic maps

Site Location Map
Key Energy Discharge Plan BW-019
Carlsbad, New Mexico

Figure 1

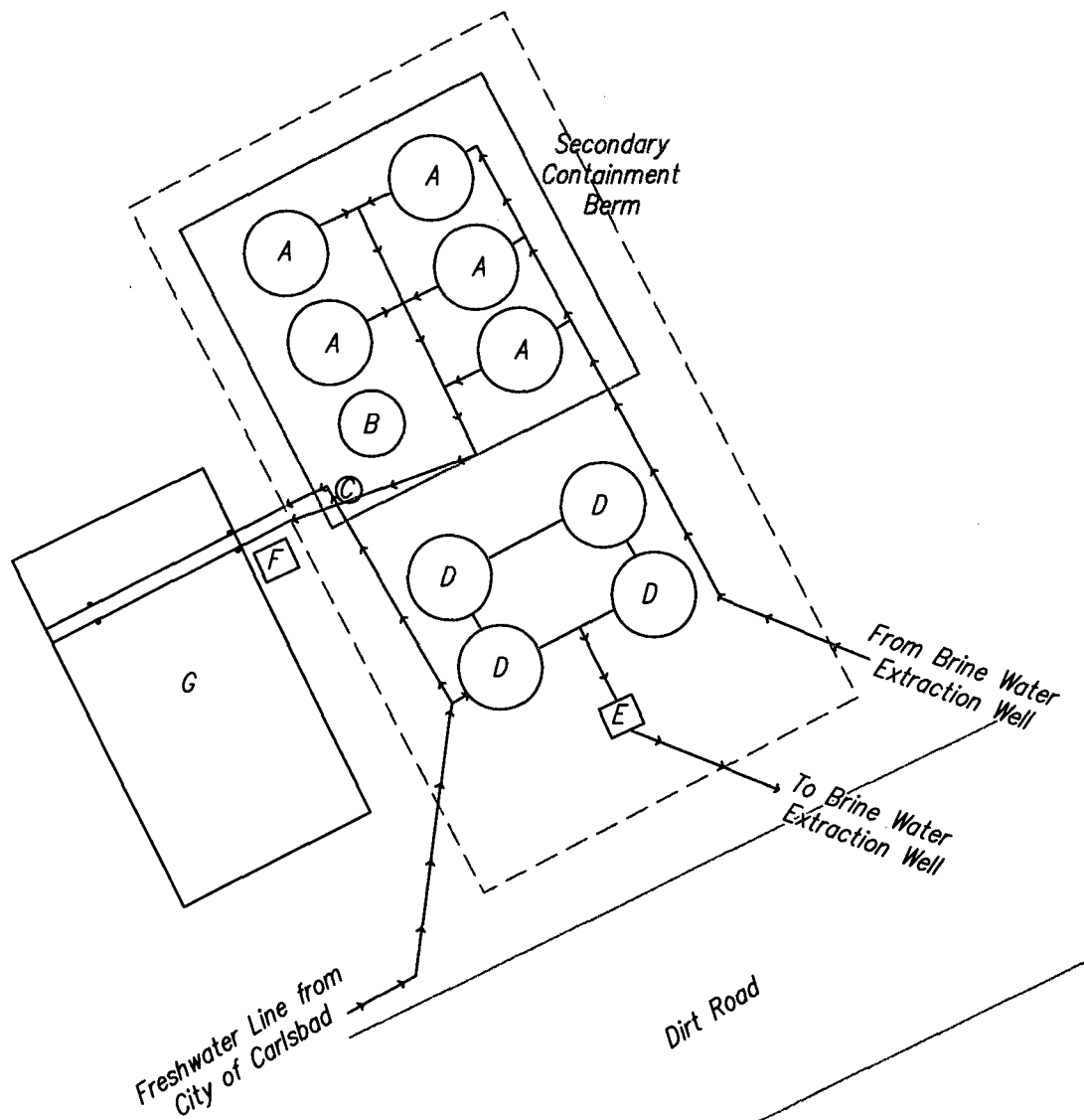
Revisions


By: _____ Date: _____
By: _____ Date: _____
Desc.: _____
Desc.: _____
Copyright 2007 Souder, Miller & Associates - All Rights Reserved

Drawn: _____
Checked: _____
Approved: _____
MLV
DAE
DAE



401 North Seventeenth Street, Suite 4
Las Cruces, New Mexico 88005-8131
(505) 847-0799 / 847-0880 (fax)
www.soudermiller.com
Serving the Southwest & Rocky Mountains




N
 Not to Scale

- | | |
|--------------------|--|
| A Brine Water Tank | E Pump Shed |
| B Catch Tank | F Meter House |
| C Sump | G Concrete Loading Pad with Drain and Loading Valves |
| D Freshwater Tank | |

Figure 2

Facility and Fluid Flow Diagram
 Key Energy Discharge Plan BW-019
 Carlsbad, New Mexico

401 North Seventeenth Street, Suite 4
 Las Cruces, New Mexico 88006-8131
 (505) 647-0799 / 647-0680 (Fax)
 www.soudermiller.com
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Drawn	JLV
Checked	JLE
Approved	JLE

Revisions
 By: _____ Date: _____ Desc.: _____
 By: _____ Date: _____ Desc.: _____
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08-07
6317307

Appendix A: Quarterly Inspection Checklist



Souder, Miller & Associates
Civil/Environmental Scientists & Engineers

STORM WATER POLLUTION PREVENTION PLAN
QUARTERLY INSPECTION CHECKLIST
 2nd ~~TRIM~~ QUARTER June, 2007

Inspector	Inspection Frequency	Date	Area Inspected	Items to Inspect	Observation	Corrective Action Recommended
<i>Jason West</i>	Quarterly	6-21-07	Brine and Freshwater Tanks	Integrity of Tanks, Foundations, Piping and Supports	<i>Good</i>	
				Tank Valves Closed	<i>Yes</i>	
				Tank Labeled with Contents		
				Releases from Tank		
				Housekeeping	<i>Good</i>	
				Accumulated Liquids Observed for Sheen, Solids		
<i>Jason West</i>	Quarterly	6-21-07	Spill Response Equipment	Spill Response Drums in Correct Locations On Site	<i>none</i>	<i>need to order drum and put in place.</i>
				Drums Labeled as Spill Response Equipment	<i>N/A</i>	
				Fire Extinguishers in Correct Locations On Site	<i>yes</i>	

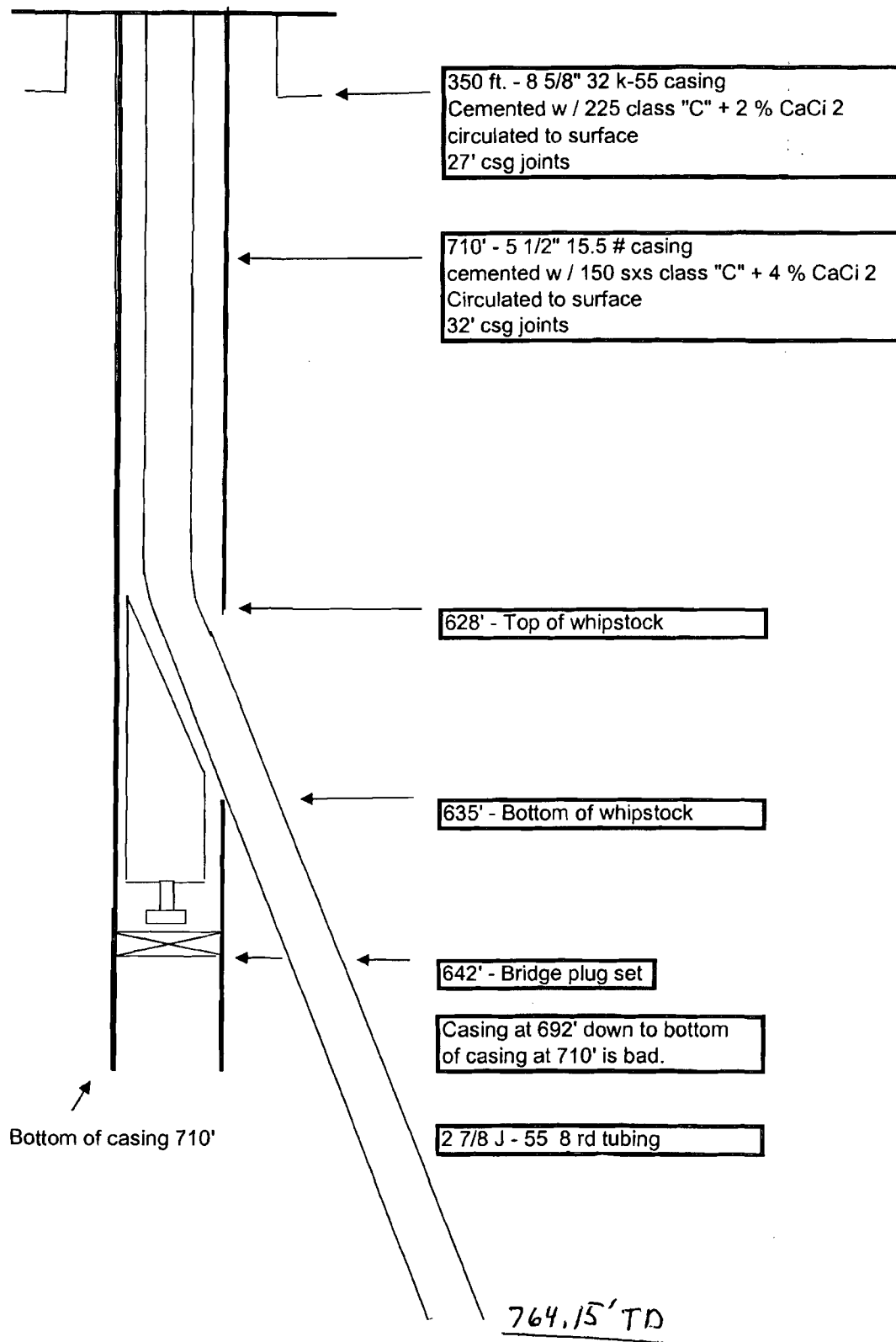
Inspector	Inspection Frequency	Date	Area Inspected	Items to Inspect	Observation	Corrective Action Recommended
<i>James [Signature]</i>	Quarterly	6-21-07	Truckers 1 Brine Station facility Property	Housekeeping	<i>Good</i>	
				Lighting	<i>Good</i>	
<i>James [Signature]</i>	Quarterly	6-21-07	Visual Observation of Any Standing Storm Water	Evidence of a Release	<i>None</i>	
	Quarterly		Previous Quarter Inspection Checklist	Status of Corrective Actions Recommended		

* If any actions recommended for deficiencies that could impact releases to storm water, a work order must be completed and a copy attached to this checklist.

Appendix B: Diagram of Brine Extraction Well



Souder, Miller & Associates
Civil/Environmental Scientists & Engineers



Appendix C: Key Energy's Emergency Contingency Plan



Souder, Miller & Associates
Civil/Environmental Scientists & Engineers



BUSINESS EMERGENCY CONTINGENCY PLAN

for

CARLSBAD BRINE STATION #1

Prepared by:

Key Energy Services, Inc.
6 Desta Drive, Suite 4400
Midland, Texas 79705
432 571-7536
432 571-7173

Daniel K. Gibson, P.G.
Corporate Environmental Manager
Louis Sanchez
Corporate Environmental Specialist II

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Name of Facility

Carlsbad Brine Station #1

Type of Facility

Brine and Water Station

Location of Facility

2 miles south of Carlsbad and ½ mile east of U.S. Highway 62/180 in Eddy County, New Mexico.

Latitude and Longitude

32° 20' 56.4" ~ 104° 14' 16.4"

SIC Code

1389

Name and Address of Owner/Operator

Key Energy Services, LLC
6 Desta Drive, Suite 4400
Midland, Texas 79705
(432) 571-7536

Designated Person Accountable for Oil Spill Prevention at Facility

Mark Perry
(505) 885-2053 ~ office
(505) 706-0230 ~ cell

Alternate

J.D. McCormack
(505) 885-2053 ~ office
(505) 706-0235 ~ office

Reportable Oil Spill Event

There have been no known spill events at this yard in the last three years.

Spill Control Equipment On Site

Absorbent

Fire Extinguishers and Blankets

Shovels, Rakes, and Squeegee

Two-Way Radios

Cellular Telephones

Pagers

Spill Control Equipment If Needed

Vacuum Trucks ~ 70-130 Barrel Capacity

Loaders ~ 3-5 Cubic Yard Capacity

Excavators

Dump Trucks ~ 12-16 Cubic Yard Capacity

Bins ~ 12-40 Cubic Yard Capacity

Motor Grader

Bull Dozer

Emergency Procedures

This contingency plan was developed to address the general procedures to be followed in the event of a spill. The procedures to be followed will be determined by the size of the spill and the requirements of the applicable regulatory agencies.

A. Procedures to be followed in case of a spill:

1. The first employee that notices a spill will evaluate the situation and undertake the following steps in the order deemed most important:
 - a. Shut off the source, if possible without endangering themselves.
 - b. Contain the spill if possible.
 - c. Notify the supervisor and describe the situation accurately. A list of Key's personnel and their telephone numbers are included in this report.
 - d. Continue operations as directed.
2. The supervisor will initiate action according to the report received from the operating employee. The supervisor will make a personal assessment of the problem and take whatever additional steps deemed to be necessary.
3. When the supervisor is assured that all necessary steps have been taken to reduce the danger to the public and/or damage to the property and that sufficient people have been directed toward stopping the source and containing the spill, all appropriate company personnel and governmental agencies will be notified.
4. Continue containment/clean up operations.

B. Containment:

1. Additional containment basins, dikes, or diversionary structure will be constructed.
2. If insufficient equipment and personnel are available at the site, assistance will be required from qualified contractors. A list of local spill containment contractors and equipment are included in this report.
3. Control of the spill can also be provided by the expeditious use of vacuum trucks and other removal methods.
4. Other clean up techniques will be used based on the requirements of the applicable federal, state, and local agencies.

Emergency Response Agencies

Carlsbad

Emergency Fire and Medical.....	911
Eddy County Oil Conservation Division (OCD).....	(505) 748-1283
Carlsbad Fire Department	(505) 885-3125
Carlsbad Police Department	(505) 887-1191

State of New Mexico

New Mexico State Police	(505) 392-5588
New Mexico Environmental Department	(505) 827-2855
NMOCD	(505) 476-3440

Federal

National Response Center	(800) 424-8802
National Poison Control Center.....	(800) 942-5969
EPA Region 6 Emergency Response Center.....	(214) 665-6428
Chemtrec	(800) 424-9300

Local Spill Containment Contractors

SMA
612 E Murray Dr
Farmington, NM 87401
(505) 325-5667

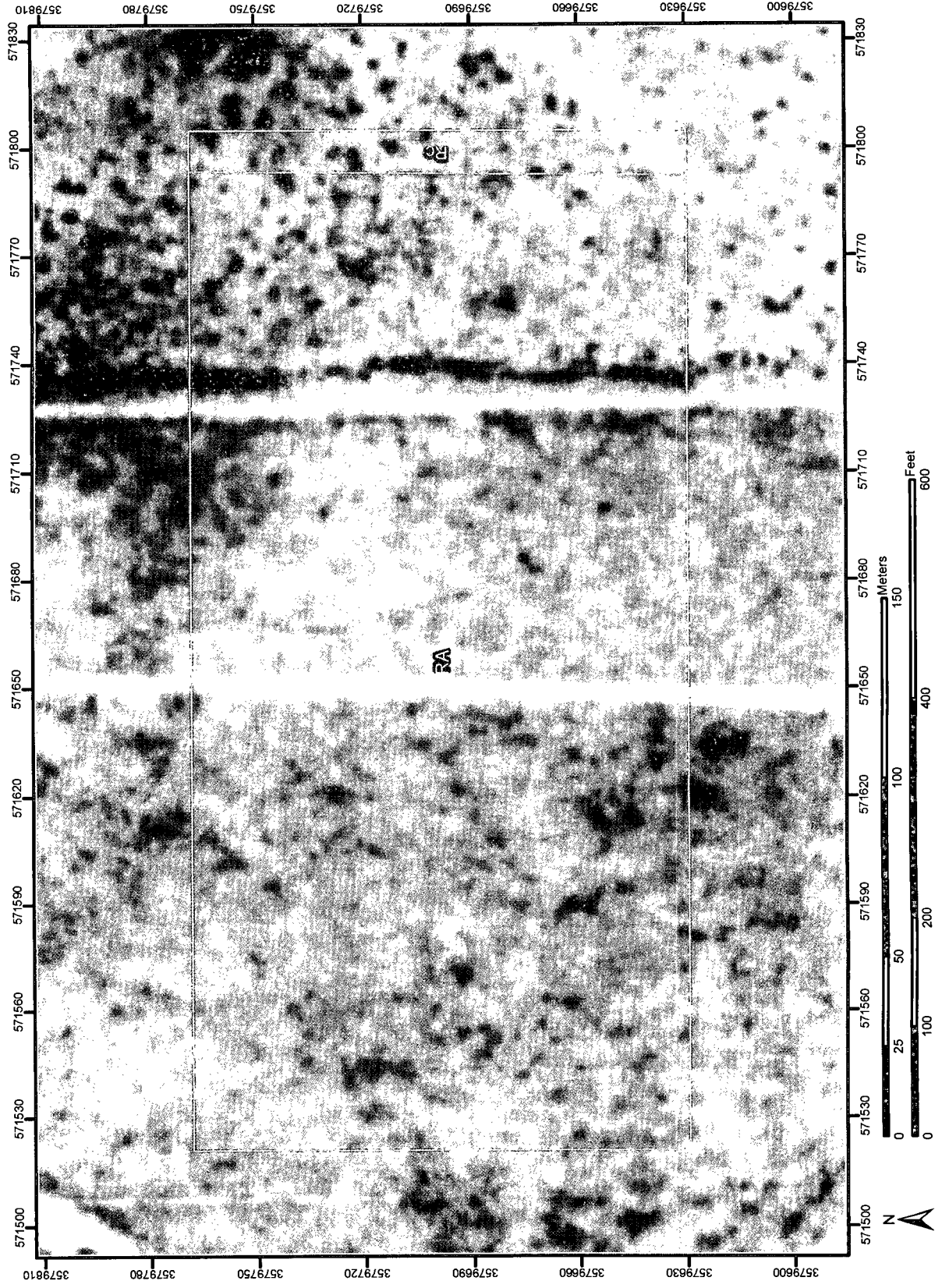
CRA
2135 S. Loop 250 West
Midland, Texas 79703
(432) 686-0086
Emergency Response: (866) 812-9565
CRA contact: Luke D. Markham

Appendix D: Web Soil Survey Map and Description











































Souder, Miller & Associates
Civil/Environmental Scientists & Engineers

Soil Map—Eddy Area, New Mexico



MAP LEGEND

	Area of Interest (AOI)		Very Stony Spot
	Soils		Wet Spot
	Special Point Features		Other
	Blowout	Special Line Features	
	Borrow Pit		Gully
	Clay Spot		Short Steep Slope
	Closed Depression		Other
	Gravel Pit	Political Features	
	Gravelly Spot	Municipalities	
	Landfill		Cities
	Lava Flow		Urban Areas
	Marsh	Water Features	
	Mine or Quarry		Oceans
	Miscellaneous Water		Streams and Canals
	Perennial Water	Transportation	
	Rock Outcrop		Rails
	Saline Spot	Roads	
	Sandy Spot		Interstate Highways
	Severely Eroded Spot		US Routes
	Sinkhole		State Highways
	Slide or Slip		Local Roads
	Sodic Spot		Other Roads
	Spoil Area		
	Stony Spot		

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 13N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 6, Jan 28, 2007

Date(s) aerial images were photographed: 9/19/1996

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Eddy Area, New Mexico (NM614)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RA	Reagan loam, 0 to 3 percent slopes	9.3	95.8%
Rc	Reagan loam, 0 to 1 percent slopes	0.4	4.2%
Totals for Area of Interest (AOI)		9.7	100.0%

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Eddy Area, New Mexico

Map Unit: RA—Reagan loam, 0 to 3 percent slopes

Component: Reagan (100%)

The Reagan component makes up 100 percent of the map unit. Slopes are 0 to 3 percent. This component is on alluvial fans, uplands. The parent material consists of alluvium and/or eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R042XC007NM Loamy ecological site. Nonirrigated land capability classification is 6e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 30 percent. The soil has a slightly saline horizon within 30 inches of the soil surface.

Map Unit: Rc—Reagan loam, 0 to 1 percent slopes

Component: Reagan (100%)

The Reagan component makes up 100 percent of the map unit. Slopes are 0 to 1 percent. This component is on alluvial fans, uplands. The parent material consists of alluvium and/or eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R042XC007NM Loamy ecological site. Nonirrigated land capability classification is 6c. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 30 percent. The soil has a slightly saline horizon within 30 inches of the soil surface.

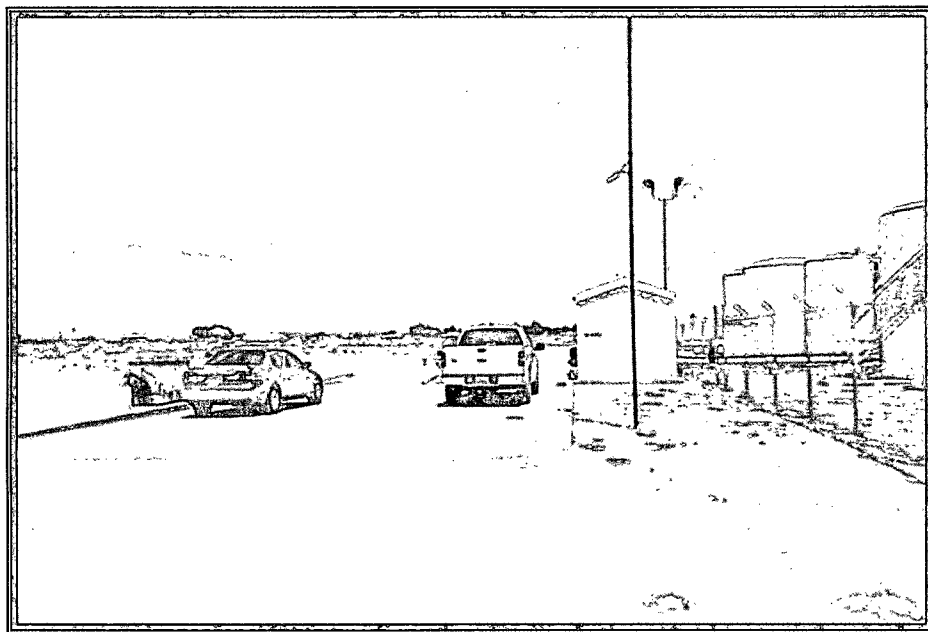
Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 6, Jan 28, 2007

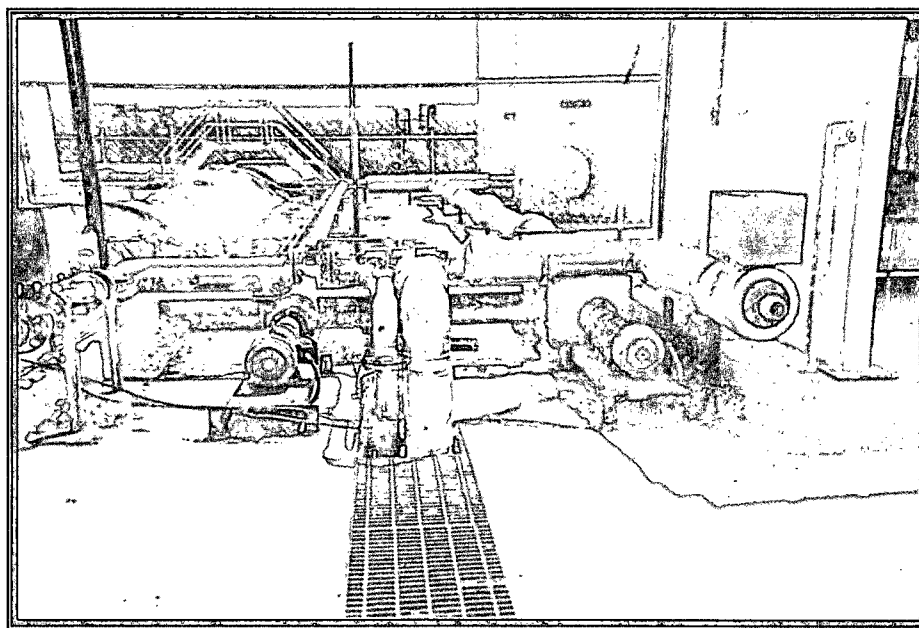
Appendix E: Photographs

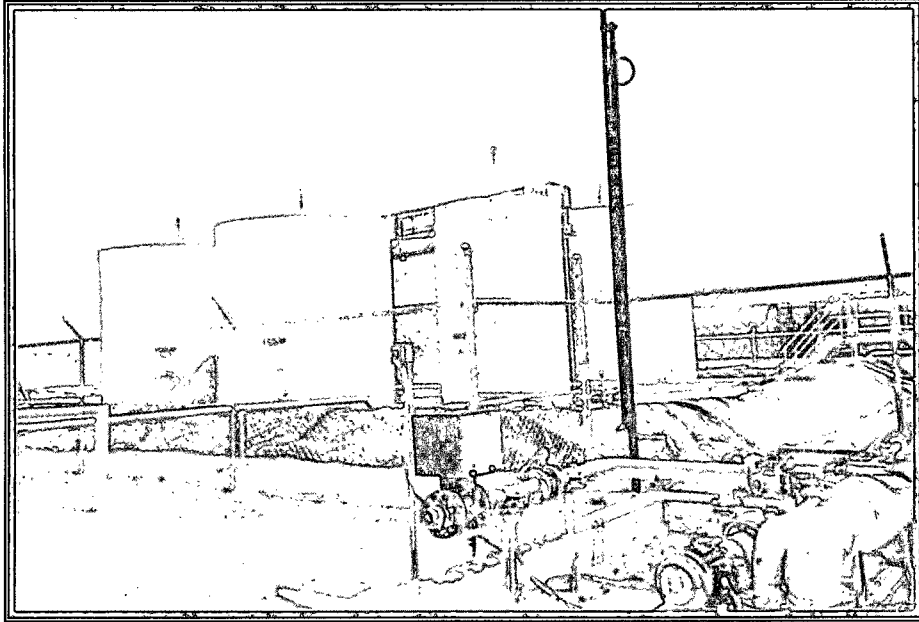


Souder, Miller & Associates
Civil/Environmental Scientists & Engineers

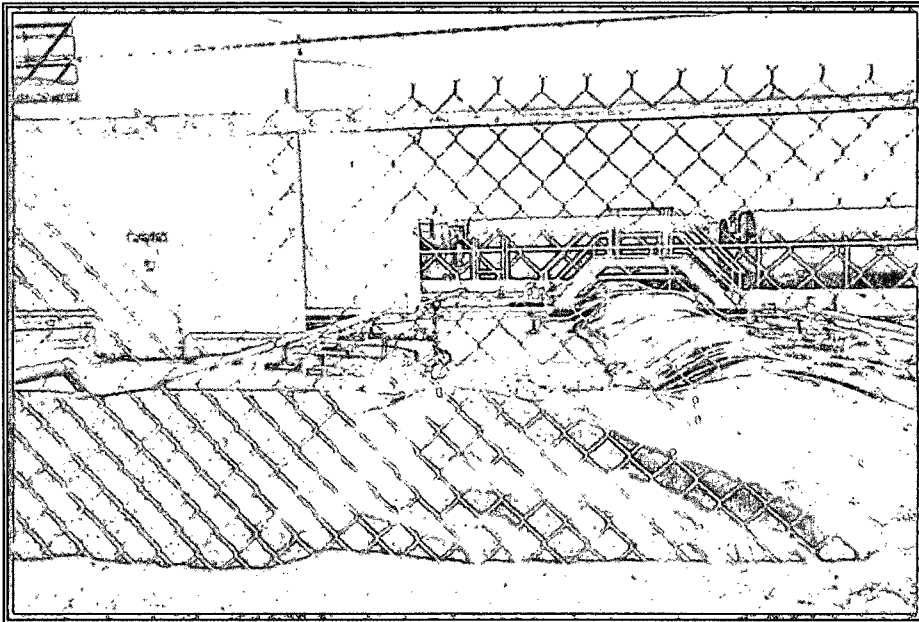


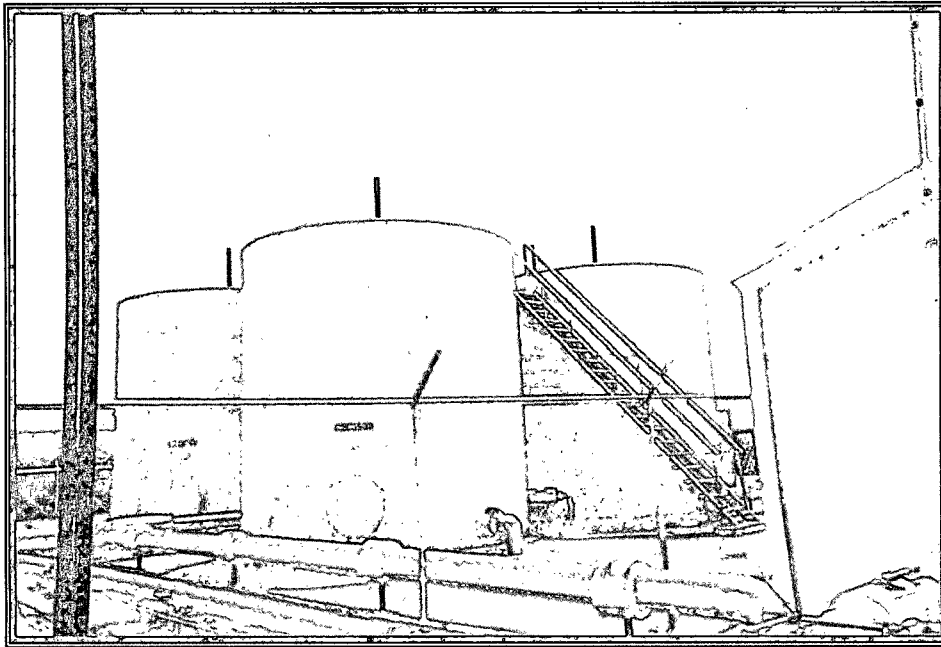
Above: Curbed concrete loading pad on the property
Below: Drain piping on the property





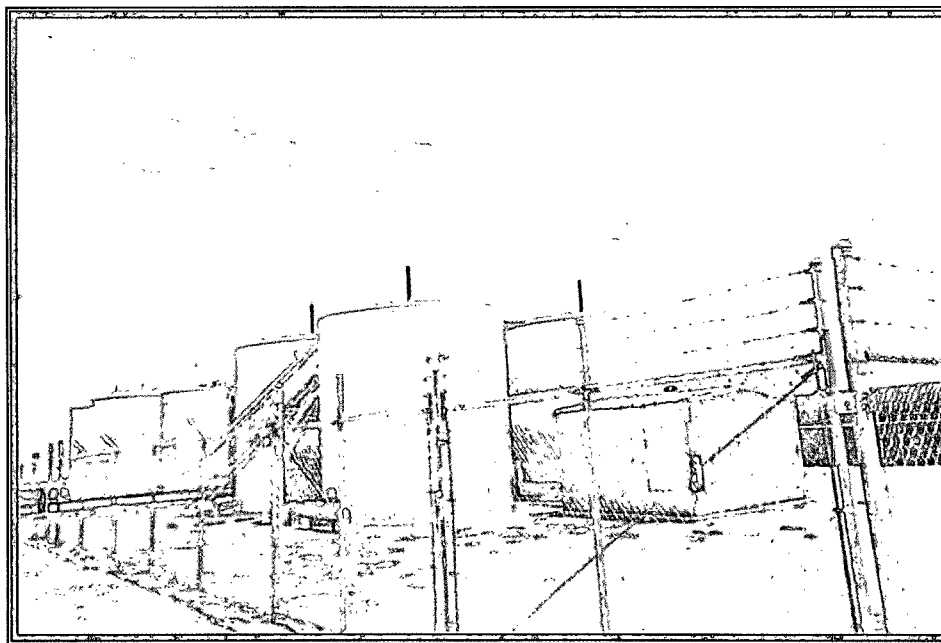
Above: Brine water storage tanks and catch tank on the property
Below: Berm surrounding the tanks and the sump on the property





Above: Freshwater storage tanks on the property

Below: Looking across the facility at the storage tanks and pump house on the property





NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

December 17, 2001

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7324

Mr. Royce Crowell
Key Energy Services, Inc. dba Yale E. Key Inc.
P.O. Box 2040
Hobbs, New Mexico 88241

Re: Discharge Plan Renewal
Carlsbad Brine Station BW-019
Eddy County, New Mexico

Dear Mr. Crowell:

The groundwater discharge plan renewal for the Carlsbad Brine Station Well BW-019 operated by Key Energy Services, Inc. dba Yale E. Key Inc. located in SE/4 NE/4 of Section 36, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter.**

The original discharge plan was approved on December 18, 1982 by the OCD with an expiration date of December 19, 1987. The discharge plan renewal application dated July 13, 2001 including attachments, subsequent information dated December 06, 2001 submitted pursuant to Section 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals. The discharge plan renewal application was submitted pursuant to Section 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations. The discharge plan is renewed pursuant to Section 5101.A. and 3109.C. Please note Section 3109.G., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve Key Energy Services, Inc. dba Yale E. Key Inc. of liability should operations result in pollution of surface or ground waters, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section

Royce Crowell
December 17, 2001
Page 2

3107.C., Key Energy Services, Inc. dba Yale E. Key Inc. is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire December 19, 2006** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 5101.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved.

The discharge plan application for the Key Energy Services, Inc. dba Yale E. Key Inc. Carlsbad Brine Station is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of \$100.00 plus a flat fee of \$1700.00 for brine stations. The OCD has not received the \$1700.00 flat fee. The flat fee may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

Please make all checks payable to:	Water Quality Management Fund C/o: Oil Conservation Division 1220 South Saint Francis Drive Santa Fe, New Mexico 87505.
------------------------------------	--

If you have any questions, please contact Wayne Price of my staff at (505-476-3487). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,



Roger C. Anderson
Environmental Bureau Chief
RCA/lwp

Attachment-1

xc: OCD Artesia Office

ATTACHMENT TO THE DISCHARGE PLAN BW-019 APPROVAL
Key Energy Services, Inc. dba Yale E. Key Inc. Carlsbad Brine Station (BW-019)
DISCHARGE PLAN APPROVAL CONDITIONS
December 17, 2001

1. Payment of Discharge Plan Fees: The \$100.00 filing fee has been received by OCD. The \$1700.00 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.
2. Commitments: Key Energy Services, Inc. dba Yale E. Key Inc. will abide by all commitments submitted in the discharge plan renewal application dated July 13, 2001, subsequent information dated December 06, 2001 and these conditions for approval.
3. Production Method: Fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out.
4. Maximum Injection Pressure: The maximum operating injection and/or test pressure at the well head will be such that the fracture pressure of the injection formation will not be exceeded. Please provide to OCD by January 31, 2003 (first annual report) the system fracture pressure calculated at the bottom casing shoe, fracture pressure gradient (psi/ft) for the system, and the maximum surface injection pressure that will not cause new fractures or propagate existing fractures.
5. Mechanical Integrity Testing: Key Energy Services, Inc. dba Yale E. Key Inc. will conduct an annual open to formation pressure test by pressuring up the formation with fluids to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. However, no operator may exceed surface injection or test pressures that may cause formation fracturing (see item 4 above) or system failures. Systems requiring test pressures less than 300 psig or methods that use testing media other than fluids, i.e. gas, must be approved by OCD prior to testing. Brine supply wells operating with isolation packers will have to pressure test both the cavern formation and casing/tubing annually.

At least once every five years and during well work-overs the cavern formation will be isolated from the casing/tubing annually and the casing pressure tested at 300 psig for 30 minutes. All pressure test must be witnessed by OCD.

6. Production/Injection Volumes/Annual Report: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the thirty-first (31) day of January of each year.
7. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (Method 40 CFR 136.3) using EPA methods.
8. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.
9. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
10. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.
11. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.
12. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.
13. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than December 31, 2002 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the annual report.

14. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity no later than December 31, 2002 and every 5 years, from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the first annual report.
15. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.
16. Well Work Over Operations: OCD approval will be obtained from the Director prior to performing remedial work, pressure test or any other Work over. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Artesia District Office.
17. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent overtopping or system failure. All spill collection and/or secondary containment devices will be emptied of fluids within 48 hours of discovery. A record of inspections will be retained on site for a period of five years.
18. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Artesia District Office.
19. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.

Rule 712 Waste: Pursuant to Rule 712, disposal of certain non-domestic waste is allowed at solid waste facilities permitted by the New Mexico Environment Department as long as the waste stream is identified in the discharge plan, and existing process knowledge of the waste stream does not change without notification to the Oil Conservation Division.

20. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.
21. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.
22. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.
23. Storm Water Plan: Key Energy Services, Inc. dba Yale E. Key Inc. will submit in the first annual report a storm water run-off plan for OCD approval.
24. Capacity/ Cavity Configuration and Subsidence Survey: A test or method will be conducted to determine the size and configuration of the mined cavity and a method to detect long-term subsidence. Plans or methods shall be submitted with first annual report for OCD approval.
25. Vadose Zone and Water Pollution: The letter dated December 06, 2001 is considered an investigation and remediation plan submitted pursuant to the discharge plan and all future discoveries of contamination will be addressed through the discharge plan process. The results of the investigation shall be submitted to OCD in the first annual report.
26. Certification: Key Energy Services, Inc. dba Yale E. Key Inc. by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Key Energy Services, Inc. dba Yale E. Key Inc. further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Conditions accepted by: **Key Energy Services, Inc. dba Yale E. Key Inc.**

Royce Crowell
Company Representative- print name
Royce Crowell Date 1/17/02
Company Representative- Sign
Title compliance specialist

Storm Water Pollution Prevention Plan

Key Energy Services, Inc.
City of Carlsbad #1 Brine Station
Eddy County, New Mexico

January 15, 2002

PREPARED FOR

Key Energy Services, Inc.



VISION

Storm Water Pollution Prevention Plan

Key Energy Services, Inc.
City of Carlsbad #1 Brine Station
Eddy County, New Mexico



VISION
January 15, 2002

PREPARED FOR

Key Energy Services, Inc.

VISION TECHNOLOGY, INC.

**Storm Water Pollution
Prevention Plan**

Key Energy Services, Inc.
City of Carlsbad #1 Brine Station
Eddy County, New Mexico

Kevin Parish
VP Operation

Prepared for:
Key Energy Services, Inc.

Prepared by:
VISION Technology, Inc.
P.O. Box 5897
Hobbs, New Mexico 88240
Tel 505 391 0229
Fax 505 391 0445

Our Ref.:
KEYCOCBSSWPPP001

Date:
January 15, 2002

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Worksheets

- 1 Storm Water Pollution Prevention Team
- 2 Material Inventory
- 3 List of Significant Spills and Leaks
- 4 Pollutant Source Identification, BMP Identification and Implementation

Figures

- 1 Topographic Map
- 2 Site Map

Appendices

- A SWPPP Checklists
- B Annual Compliance Inspection Report and Certification
- C Monitoring Requirements
- D SWPPP Records

**Storm Water Pollution
Prevention Plan**

VISION TECHNOLOGY, INC.

Facility Information

Name of Facility and Location

Key Energy Services, Inc.
City of Carlsbad #1 Brine Station
2 Miles south of Carlsbad and ½ miles East of U.S. Hwy 62/180
Eddy County, New Mexico
Telephone: (505) 885-2053

HS&E Manager

Bernave Martinez

VISION TECHNOLOGY, INC.

1.0 Introduction

1.1 Goals of the Storm Water Pollution Prevention Plan

On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published regulations to control storm water discharges under the National Pollution Discharge Elimination System (NPDES). Under these regulations, industrial facilities are to be issued a storm water discharge permit with requirements specifically tailored towards control of storm water contamination. The storm water regulations presented three permit application options for storm water discharges associated with industrial activity. The first was to submit an individual application; the second option was to participate in a group application; and the third option was to file a Notice of Intent (NOI) to be covered in accordance with the requirements of a multi-sector general permit (MSGP). Key Energy Services, Inc. (Key Energy) located in Carlsbad, New Mexico, elected to submit a NOI to be covered under the MSGP.

Industrial facilities that discharge under authority of a MSGP are required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The pollution prevention plan approach, developed by the USEPA, gives facilities flexibility to establish a site-specific storm water management program to meet Best Available Technology/Best Control Technology (BAT/BCT) standards required by the Clean Water Act (CWA) instead of strictly relying on the imposition of numerical discharge limitations.

The pollution prevention approach adopted by USEPA focuses on two major objectives:

- To identify sources of pollution potentially affecting the quality of storm water discharges associated with industrial activity from the facility.
- To describe and ensure implementation of practices to minimize and control pollutants in storm water discharges associated with industrial activity from the facility.

The process of developing a SWPPP involves the following steps:

- Formation of a team of qualified personnel who will be responsible for preparing the plan and assisting the facility manager in its implementation.
- Assessment of appropriate management practices and controls.

VISION TECHNOLOGY, INC.

- Implementation of selected management practices and controls.
- Periodic evaluation of the ability of the plan to prevent storm water pollution and to comply with the terms of the NPDES MSGP.

In developing a SWPPP, the USEPA requires implementation of Best Management Practices (BMPs) to eliminate, minimize, and control potential sources of storm water pollution. BMPs may take the form of a process, activity, or physical structure. They are defined as structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water flows, to direct the flow of storm water, or to treat polluted storm water flows. Some BMPs are simple and can be put in place immediately, while others are more complicated and require extensive planning or space. The USEPA classifies BMPs into two categories:

- Baseline BMPs
- Advanced BMPs

The baseline BMPs are inexpensive, easily implemented controls to prevent storm water pollution. They include general housekeeping, preventive maintenance, spill prevention and control, inspections, employee training, sediment and erosion control, and management of runoff. An advanced BMP would require structural controls.

The advanced BMP category is further subdivided into activity-specific and site specific BMPs. Activity-Specific BMPs relate to practices associated with minimizing pollutants generated from certain activities such as fueling, vehicle washing and painting. An example of activity-specific BMPs would be overhead cover, spill kits and overfill prevention equipment for fueling operations. An example of a site-specific BMP is grading an area to direct storm water away from industrial activities. At a minimum, facilities are expected to implement the entire baseline BMPs. Additionally, in developing the SWPPP, each facility must consider advanced BMPs, evaluate them for their potential effectiveness, and implement the appropriate ones.

This SWPPP was prepared in accordance with the USEPA's guidance document entitled *Storm Water Management For Industrial Activities Developing Pollution Prevention Plans and Best Management Practices*, Office of Water, EPA 832-R-92-006, September 1992.

Storm Water Pollution Prevention Plan

VISION TECHNOLOGY, INC.

1.2 Compatibility With Other Plans

As part of the SWPPP, inspections and routine maintenance procedures will be carried out in an effort to prevent spills/releases of materials at this facility. This plan should be compatible with other plans written for the site so as to prevent any conflicting statements, procedures, and/or practices during implementation of this and other plans. The Key Energy City of Carlsbad #1 Brine Station has a HAZCOM Program and a Material Safety Data Sheet (MSDS) training program.

2.0 Storm Water Pollution Prevention Team

The Storm Water Pollution Prevention Team is responsible for development and implementation of the SWPPP. The team members are listed with titles, phone numbers, and responsibilities as shown on Worksheet #1 (below).

STORM WATER POLLUTION PREVENTION TEAM	WORKSHEET #1
MEMBER ROSTER	Facility Name: Carlsbad #1 Brine Station
	Corporation: Key Energy Services, Inc.
	Completed By: Kevin Parish
	Title: VP Operations VISION TECHNOLOGY, INC.
Date of Last Revision: January 15, 2002	
Leader: John Hutcheson Title: Yard Manager Office Phone: (505) 885-2053	
Responsibilities: <ul style="list-style-type: none"> • <u>Implement Plan;</u> • <u>Keep Plan updated and review at least annually.</u> 	
Members: (1) <u>John Hutcheson</u> Title: Facility Manager Phone: (505) 885-2053	
Responsibilities: <ul style="list-style-type: none"> • <u>Responsible for training of facility personnel</u> • <u>Maintain a complete inventory of hazardous materials</u> • <u>Ensure proper disposal of hazardous wastes</u> • <u>Ensure required monitoring and reporting to comply with general permit</u> • <u>Ensure process activities and yard activities comply with the SWPPP</u> • <u>Assist with required monitoring and reporting to comply with the NPDES Permit</u> • <u>Responsible for day to day implementation of the BMPs</u> • <u>Ensure that the members perform the required activities, including weekly inspections</u> 	

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3.0 Facility Assessment

3.1 Description

The Key Energy City of Carlsbad #1 Brine Station is located ½ miles east of U.S. Hwy 62/180 in Eddy County, New Mexico (Figure 1). Entrance into the facility is obtained from one gate located at the south end of the yard (see Figure 2). The facility is approximately 4 acres in size and is utilized for (1) A brine well; (2) Brine storage; (3) Fresh water storage; and (4) Loading Brine water. The site also has two small buildings.

The Key Energy City of Carlsbad #1 Brine Station Brine Water for oil and gas field services. The SIC Code is 1389. Trucks enter the South gate to load Brine water (see Figure 2). Mr. John Hutcheson of Key Energy stated that when the drip sump is full, the fluids are sucked out and taken to one of Key Energy's SWD's for disposal.

Brine water is produced at the site by injecting fresh water down the casing of the brine well and circulating brine water up the tubing. The brine water is stored in 2-1000 bbl steel tanks located within a containment wall. Trucks load on a cement loading dock with a small drip sump. The trucks transport the brine water offsite to oil and gas well drilling locations.

One empty tank is located inside the containment wall, which is not used. 4 aboveground storage tanks (AST) which store fresh and brine water are located within a containment wall.

The facility is outside the city limits of the City of Carlsbad, New Mexico.

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3.2 Facility Drainage

Site drainage routes are shown in Figure 2. The storm water at the facility is a gravity system that drains to the southeast, and is contained on site within a containment wall.

3.3 Inventory and Description of Exposed Materials

An inventory and description of exposed materials is presented in Worksheet #2. This worksheet should be updated periodically so that it can be properly used to assess sources and control measures of storm water contamination.

3.4 Significant Spills and Leaks

There have been no known significant spills of hazardous substances or toxic pollutants in the past 3 years from the date of this plan. A significant spill is defined by the USEPA as releases, which occur within a 24-hour period of hazardous substances in excess of reportable quantities under Section 311 of the CWA and Section 302 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Reportable quantities can be found listed in 40 CFR Parts 117 and 302. In the event of a significant spill or leak, notify the National Response Center at (800) 424-8802 and the OCD (505) 748-1283 as soon as possible. Also Worksheet #3 should be updated at that time.

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**Storm Water Pollution
Prevention Plan**

STORM WATER POLLUTION PREVENTION PLAN						WORKSHEET #2		
FACILITY NAME: Key Energy City of Carlsbad #1 Brine Station								
COMPLETED BY: Kevin Parish								
TITLE: VP Operations								
VISION TECHNOLOGY, INC.								
DATE OF LAST REVISION: January 15, 2002								
MATERIAL INVENTORY (Potential Pollutant Sources)						QUANTITY (GAL)	LIKELIHOOD OF CONTACT WITH STORMWATER. IF YES, DESCRIBE REASON	PAST SIGNIFICANT SPILL/LEAK
MATERIAL/ ACTIVITY	LOCATION	AST/UST	QUANTITY (GAL) USED	QUANTITY (GAL) STORED	QUANTITY (GAL) PRODUCED	QUANTITY EXPOSED IN LAST 3 YEARS	Yes/No	Yes/No
1) Brine Water	Facility grounds at eastern side of the site	-----	Varies	Approx. 2000 bbis	750 to 1200 per day	None known	No, located inside a containment wall	No (none known)

Storm Water Pollution Prevention Plan

VISION TECHNOLOGY, INC.

STORM WATER POLLUTION PREVENTION PLAN				WORKSHEET #3			
LIST OF SIGNIFICANT SPILLS AND LEAKS				Facility Name: Key Energy City of Carlsbad #1 Brine Station			
				Completed By: Kevin Parish			
				Title: VP Operations, Vision Technology, Inc.			
				Date of Last Revision: January 15, 2002			

Direction: Record below all significant spills and significant leaks of toxic or hazardous pollutants which have occurred at the facility in the last three years prior to the effective date of the permit (this includes, but not limited to, releases of oil or hazardous substances in excess of reportable quantities).									
1 st Year Prior Date	Spill	Leak	Location	Description Type of Material	Response Procedures Quantity	Exposed to Storm Water			Preventative Measures
						Source, if Known	Reason	Amt. Matl. Recovered	
N/A									
2 nd Year Prior Date	Spill	Leak	Location	Description Type of Material	Response Procedures Quantity	Exposed to Storm Water			Preventative Measures
						Source, if Known	Reason	Amt. Matl. Recovered	
N/A									
3 rd Year Prior Date	Spill	Leak	Location	Description Type of Material	Response Procedures Quantity	Exposed to Storm Water			Preventative Measures
						Source, if Known	Reason	Amt. Matl. Recovered	
N/A									

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3.5 Summary of Potential Pollutant Sources and Risks

Potential pollutant sources and risks of contaminating storm water runoff can be summarized as follows:

- **Brine Water** - Approximately 2000 bbls of brine water is stored on the location. There is a 3" above ground pressurized line from the well to the tanks. Brine could pose a potential risk for polluting storm water.

4.0 Storm Water Management

4.1 Baseline BMPs

Baseline BMPs are practices that are inexpensive, relatively simple, and applicable to a wide-variety of industries and activities. The BMPs identified in the NPDES MSGP Sector I for Oil and Gas Extraction facilities were considered for their appropriateness and effectiveness in preventing storm water pollution at the Key Energy City of Carlsbad #1 Brine Station. The following sections highlight those BMPs selected from the NPDES NISGP that are already in place or expected to be implemented at the facility. Key Energy employees should be actively involved in the implementation of these measures.

4.1.1 Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly work environment. Often the most effective first step towards preventing pollution in storm water from sites simply involves using good common sense to improve the facility's basic housekeeping methods. Poor housekeeping can result in more waste being generated than necessary and greater potential for storm water contamination. A clean orderly work area reduces the possibility of accidental spills caused by the mishandling of chemicals and equipment and should reduce safety hazards to personnel. Well maintained material and chemical storage areas will reduce the possibility of storm water contact with pollutants. The good housekeeping BMPs in existence at the Key Energy City of Carlsbad #1 Brine Station include the following elements:

- Keeping all valves closed.
- Keeping trash dumpsters closed.
- Identifying all chemical substances present in the facility and obtaining the Material Safety Data Sheet (MSDS) for each.
- Properly labeling tanks.
- Sucking out the drip sump routinely.

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4.1.2 Preventive Maintenance

The effective preventive maintenance program for Key Energy City of Carlsbad #1 Brine Station includes the following elements:

- Identifying equipment and facility areas that should be inspected and inspect those identified.
- Adjusting, repairing, or replacing equipment in an appropriate and timely manner.
- Maintaining complete records of inspections and equipment.
- Keeping trash can lids closed at all times.
- Keeping all valves closed.

Equipment which requires inspections and preventive maintenance at the Key Energy City of Carlsbad #1 Brine Station includes the Brine storage area, Brine well, Transfer pumps, and Pressurized lines. These areas will be examined for leaks, overflows, corrosion, or other deterioration or noncontainment.

4.1.3 Comprehensive Visual Inspections of Facility

Visual inspections should be performed for evidence of, or the potential for, conditions, which may result in contamination of storm water runoff with pollutants from the facility. It is the practice of Key Energy employees to routinely look for evidence of spills/leaks throughout the facility. Spills/leaks identified are promptly addressed. A checklist and schedule for routine inspections are provided in Appendix A and should be completed each time an inspection is conducted. Inspections performed at the Key Energy facility include the following:

- Weekly inspections of the Brine storage area to ensure the tanks are in good condition.
- Weekly inspections to ensure sumps are empty.

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- Weekly inspections to ensure no leaks or spill have occurred.
- Weekly inspections of brine well.
- Weekly inspections of all Lines and valves areas for leaks or structural damage on operational days.

Facility personnel are also required to conduct, at a minimum, quarterly visual inspections of BMPs including:

- Assessment of the integrity of any storm water control structures such as culverts and berms.
- Visual inspections of storage areas, and aboveground storage tanks. These inspections must be during daylight hours at least once in each of the following periods.
- January through March
- April through June
- July through September
- October through December

Records of inspections will be maintained in Appendix D as part of this plan.

Inspection records should note when the inspections were performed, who conducted the inspection, what areas were inspected, what problems were identified, and steps taken to correct any problems. All routine inspection forms will be retained for at least 1 year after coverage under the NPDES MSGP terminates.

4.1.4 Spill Prevention and Response

The Key Energy City of Carlsbad #1 Brine Station does not have a Petroleum SPCC plan in existence. To prevent or minimize storm water contamination at chemical management and storage areas, and from equipment or container failures, the following ESOPs will be implemented. Spill prevention and response procedures, which address potential sources of leaks or spills, are as follows:

- Containing and cleaning up leaks and spills as soon as possible. If malfunctioning equipment is responsible for the spill or leak, repairs are conducted as soon as possible.

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- Clean-up procedures include use of dry absorbents. An adequate supply of dry absorbent materials shall be maintained at the Carlsbad Yard. Used absorbents are properly disposed.

4.1.5 Sediment and Erosion Control

Sediment and erosion were not a problem during the facility assessment. However, if routine inspections reveal any sign of soil erosion, appropriate measures, such as planting vegetation or laying of caliche gravel, will be taken. The SWPPP would then be revised accordingly to incorporate these actions into the planned BMPs.

4.1.6 Management of Runoff

Runoff did not appear to be a problem during the facility assessment.

If routine inspections reveal the need for further action to manage runoff, appropriate measures, such as installing curbing, berms, or other engineering controls, will be taken. The SWPPP would then be revised accordingly to incorporate these measures into the planned BMPs.

4.2 Activity-Specific BMPs

The BMPs that are specifically appropriate for this facility. The following main areas have been identified as potentially significant sources of storm water pollutants that require activity-specific BMPs at the Key Energy City of Carlsbad #1 Brine Station.

4.2.1 Liquid Storage in Aboveground Tanks and Containers

Materials spilled, leaked, or lost from ASTs, Lines, and Valves may accumulate in soils or on other surfaces and be carried by rainfall runoff. The facility has adopted appropriate BMPs to minimize such impacts for non-empty tanks and containers, including:

- Comply with applicable State and Federal laws.
- Train employees properly.
- Install storage tank overfill protection systems, if deemed necessary.
- Inspect tanks and equipment routinely.

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5.0 Plan Implementation

Implementation of the SWPPP for the Key Energy City of Carlsbad #1 Brine Station involves three steps:

- Developing a schedule for implementation.
- Assigning specific individuals with the responsibility for implementing aspects of the plan and/or monitoring implementation.
- Ensuring that management approves of the implementation schedule and strategy and schedule regular times for reporting progress to management.

Worksheet #4 provides an example of how BMPs can be outlined with a description of the actions required for implementation dates for each action, persons responsible for each action, and other special requirements. The scheduled completion dates and other information should be completed by facility personnel.

Storm Water Pollution Prevention Plan

VISION TECHNOLOGY, INC.

STORM WATER POLLUTION PREVENTION PLAN		WORKSHEET #4	
		Facility Name: Key Energy City of Carlsbad #1 Brine Station	
		Completed By: Kevin Parish	
		Title: VP Vision Technology, Inc.	
		Date of Last Revision: January 15, 2002	
BMPs	Description of Action(s) Required for Implementation BMP Identification and Implementation	Scheduled Completion Date(s) for Required Action	Person Responsible for Implementation Additional Requirements/Notes
Good Housekeeping	<ul style="list-style-type: none"> Keep trash dumpsters lids closed. Identifying all chemical substances present in the facility and obtaining the MSDS for each. Properly labeling storage drums and tanks. 	<p>In-Place</p> <p>In-Place</p>	<p>John Hutcheson</p> <p>John Hutcheson</p>
Preventive Maintenance	<ul style="list-style-type: none"> Identifying equipment, systems, and facility areas that should be inspected and inspect those identified. Adjusting, repairing, or replacing equipment in an appropriate and timely manner. Maintaining complete record of inspection and equipment. 	<p>In-Place</p> <p>In-Place</p> <p>In-Place</p>	<p>John Hutcheson</p> <p>John Hutcheson</p> <p>John Hutcheson</p>

Storm Water Pollution Prevention Plan

VISION TECHNOLOGY, INC.

STORM WATER POLLUTION PREVENTION PLAN		WORKSHEET #4	
		Facility Name: Key Energy City of Carlsbad #1 Brine Station	
		Completed By: Kevin Parish	
		Title: VP Vision Technology, Inc.	
		Date of Last Revision: January 15, 2002	
BMPs	Description of Action(s) Required for Implementation BMP Identification and Implementation	Scheduled Completion Date(s) for Required Action	Person Responsible for Implementation
Visual Inspection	<ul style="list-style-type: none"> Weekly inspections of the Brine storage. Weekly inspections to ensure drip pans are empty 	In-Place In-Place	John Hutcheson John Hutcheson
Spill Prevention and Response	<ul style="list-style-type: none"> Containing and cleanup of leaks and spills. Weekly inspections of AST and drum storage secondary containment areas. 	In-Place In-Place	John Hutcheson John Hutcheson
			Additional Requirements/Notes

Storm Water Pollution Prevention Plan

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STORM WATER POLLUTION PREVENTION PLAN			WORKSHEET #4	
POLLUTANT SOURCE IDENTIFICATION			Facility Name: Key Energy City of Carlsbad #1 Brine Station	
BMP Identification and Implementation			Completed By: Kevin Parish	
			Title: VP Vision Technology, Inc.	
			Date of Last Revision: January 15, 2002	
BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Required Action	Person Responsible for Implementation	Additional Requirements/Notes
Containment area around the used motor oil and filters	<ul style="list-style-type: none"> Keep all trash, spills and water cleaned out of the containment areas. 	In-Place	John Hutcheson	The containment area should be kept free of trash, spills and water at all times. This will prevent contaminant overflowing if storm water is collected in the containment area.
Liquid Storage in ASTs and Containers	<ul style="list-style-type: none"> Comply with applicable State and Federal laws. Train employees properly. Inspect non-empty ASTs and containers routinely 	In-Place In-Place In-Place	John Hutcheson John Hutcheson John Hutcheson	

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6.0 Employee Training

The employee training program must inform personnel at all levels of responsibility of the components and goals of the SWPPP. Training will address each component of the plan including how and why tasks are to be implemented. Topics will include, at a minimum, the following:

- Storm Water Pollution Prevention.
- Spill Prevention and Response.
- Good Housekeeping Practices.
- Preventative Maintenance Practices.

Employees will receive initial training and refreshers on at least an annual basis.

7.0 SWPPP Evaluation and Monitoring Requirements

7.1 Annual Site Inspection/BMP Evaluation

Qualified personnel must conduct site compliance evaluations at least once a year. Qualified personnel include those employees familiar with all facility industrial operations and SWPPP goals and requirements. These inspectors should be able to make necessary management decisions or have direct access to management. As part of the compliance evaluations, the inspectors are required to:

- Confirm the accuracy of the description of potential pollution sources contained in the plan. Identify any changes in potential pollution sources.
- Evaluate the effectiveness of measures identified in this plan to reduce pollutant loading and whether additional measures are needed.
- Assess compliance with the terms and conditions of this plan.
- Revise the plan (as needed) within 4 weeks of inspection.
- Complete Report Form for Annual Compliance Inspection (Appendix B) summarizing inspection results and follow up actions, the date of inspection and personnel who conducted the inspection.

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- Document all incidents of noncompliance. Where there are no incidents of noncompliance, the inspection report must contain a certification that the facility is in compliance with the plan.
- Sign the report and keep it with all other completed site inspection forms related to this SWPPP.
- Evaluation reports must be retained for at least 3 years after evaluation.

7.2 Storm Water Discharge Monitoring Requirements

Permittees are not required to conduct monitoring under Sector I - Oil and Gas Extraction Facilities.

7.3 Recordkeeping and Reporting

Incidents, such as spills or other discharges, along with other information describing the quality and quantity of storm water discharges must be recorded. Inspections and maintenance activities shall be documented and kept with the plan. Records must be maintained for 1 year after the permit expires.

7.3.1 Spills and Leaks

For each spill or leak, the permittee should record the following:

- a. Facility name and location, date, time, and cause and type of incident.
- b. Name and telephone number of reporter.
- c. Name and quantity of materials involved.
- d. Response procedures.
- e. Name of person cleaning up the spill.
- f. Extent of any injuries.
- g. Hazards to human health and the environment off-site.
- h. Steps taken to prevent recurrence of similar spills or leaks.

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The permittee should retain the records of any spills or leaks for a period of 3 years. The HS&E Manager who is responsible for reporting the spill to the appropriate agencies and shall keep these records on-site.

The HS&E Manager is also responsible for investigating each harmful petroleum spill and implementing steps to prevent a reoccurrence.

7.3.2 Inspections and Maintenance

Inspections records should note the following:

- a. Facility name and location, time, and date of inspection.
- b. Name(s) of the person(s) who conducted the inspection.
- c. Area inspected.
- d. Problems identified.
- e. Steps taken to correct any problems.

All routine inspection forms will be retained for at least 1 year after coverage under the permit terminates. Records of inspections will be maintained in Appendix D as part of this plan.

7.4 Plan Review and Revisions

The SWPPP must be amended whenever there is a change in design, construction, operation, or maintenance, which may impact the potential for pollutant to be discharged or if the SWPPP proves to be ineffective in controlling the discharge of pollutants.

Appendix A

SWPPP Checklist

APPENDIX A

SWPPP Checklist

Quarterly Visual Inspection Checklist Key Energy City of Carlsbad #1 Brine Station Eddy County, New Mexico

Inspector's Name and Phone Number: _____	Inspection Site: _____
Inspection Date: _____	
Weather Conditions: _____	

Housekeeping Items	Yes	N/A	No	Corrective Action
1. Have all spills been picked up?				
2. Are the covers for trash dumpsters closed?				
3. Are there any damaged, corroded, or leaking AST?				
4. Are all ASTs with fluids properly labeled?				
5. Are there any unneeded fluids ASTs that can be taken offsite for recycling?				
6. Are all active ASTs that contain hydrocarbons, if any, located inside impervious secondary containment areas, and are the secondary containment areas water tight?				
7. Is garbage removed regularly, and are garbage bins kept closed?				
8. Is there evidence of drips or leaks from equipment or machinery on-site that can lead to contact with storm water?				
9.				
10.				

Inspectors Name

Inspection Date

Appendix B

**Annual Compliance Inspection
Report and Certification**

APPENDIX B

Annual Compliance Inspection Report and Certification
Key Energy City of Carlsbad #1 Brine Station
Eddy County, New Mexico

Inspector: _____

Date of Inspection: _____

Scope and Content of Inspection:

Observation relating to the implementation of the SWPPP:

Actions required to update and improve the effectiveness of the SWPPP:

Incidents of noncompliance:

I hereby certify that this facility is in compliance with the terms and conditions of this Storm Water Pollution Prevention Plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____

Date: _____

Appendix C

Monitoring Requirements

APPENDIX C

Monitoring Requirements Key Energy City of Carlsbad #1 Brine Station Eddy County, New Mexico

Permittees are not required to conduct monitoring under Section I – Oil and Gas Extraction Facilities. The Following requirements will be observed for any monitoring that is conducted.

Sample Type

Any discharge data collected shall be grab samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (grater than 0.1 inch rainfall) storm event.

The grab sample shall be taken during the first 30 minutes of the discharge. Samples shall be collected at the nearest accessible location just prior to discharge and after final treatment. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of discharge, and the discharger shall submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable.



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

December 17, 2001

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7324

Mr. Royce Crowell
Key Energy Services, Inc. dba Yale E. Key Inc.
P.O. Box 2040
Hobbs, New Mexico 88241

Re: Discharge Plan Renewal
Carlsbad Brine Station BW-019
Eddy County, New Mexico

Dear Mr. Crowell:

The groundwater discharge plan renewal for the Carlsbad Brine Station Well BW-019 operated by Key Energy Services, Inc. dba Yale E. Key Inc. located in SE/4 NE/4 of Section 36, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter.**

The original discharge plan was approved on December 18, 1982 by the OCD with an expiration date of December 19, 1987. The discharge plan renewal application dated July 13, 2001 including attachments, subsequent information dated December 06, 2001 submitted pursuant to Section 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals. The discharge plan renewal application was submitted pursuant to Section 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations. The discharge plan is renewed pursuant to Section 5101.A. and 3109.C. Please note Section 3109.G., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve Key Energy Services, Inc. dba Yale E. Key Inc. of liability should operations result in pollution of surface or ground waters, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section

Royce Crowell
December 17, 2001
Page 2

3107.C., Key Energy Services, Inc. dba Yale E. Key Inc. is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire December 19, 2006** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 5101.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved.

The discharge plan application for the Key Energy Services, Inc. dba Yale E. Key Inc. Carlsbad Brine Station is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of \$100.00 plus a flat fee of \$1700.00 for brine stations. The OCD has not received the \$1700.00 flat fee. The flat fee may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

Please make all checks payable to: **Water Quality Management Fund**
C/o: Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505.

If you have any questions, please contact Wayne Price of my staff at (505-476-3487). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,



Roger C. Anderson
Environmental Bureau Chief
RCA/lwp

Attachment-1

xc: OCD Artesia Office

ATTACHMENT TO THE DISCHARGE PLAN BW-019 APPROVAL
Key Energy Services, Inc. dba Yale E. Key Inc. Carlsbad Brine Station (BW-019)
DISCHARGE PLAN APPROVAL CONDITIONS
December 17, 2001

1. Payment of Discharge Plan Fees: The \$100.00 filing fee has been received by OCD. The \$1700.00 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.
2. Commitments: Key Energy Services, Inc. dba Yale E. Key Inc. will abide by all commitments submitted in the discharge plan renewal application dated July 13, 2001, subsequent information dated December 06, 2001 and these conditions for approval.
3. Production Method: Fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out.
4. Maximum Injection Pressure: The maximum operating injection and/or test pressure at the well head will be such that the fracture pressure of the injection formation will not be exceeded. Please provide to OCD by January 31, 2003 (first annual report) the system fracture pressure calculated at the bottom casing shoe, fracture pressure gradient (psi/ft) for the system, and the maximum surface injection pressure that will not cause new fractures or propagate existing fractures.
5. Mechanical Integrity Testing: Key Energy Services, Inc. dba Yale E. Key Inc. will conduct an annual open to formation pressure test by pressuring up the formation with fluids to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. However, no operator may exceed surface injection or test pressures that may cause formation fracturing (see item 4 above) or system failures. Systems requiring test pressures less than 300 psig or methods that use testing media other than fluids, i.e. gas, must be approved by OCD prior to testing. Brine supply wells operating with isolation packers will have to pressure test both the cavern formation and casing/tubing annually.

At least once every five years and during well work-overs the cavern formation will be isolated from the casing/tubing annulus and the casing pressure tested at 300 psig for 30 minutes. All pressure test must be witnessed by OCD.

6. Production/Injection Volumes/Annual Report: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the thirty-first (31) day of January of each year.
7. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (Method 40 CFR 136.3) using EPA methods.
8. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.
9. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
10. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.
11. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.
12. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.
13. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than December 31, 2002 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the annual report.

14. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity no later than December 31, 2002 and every 5 years, from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the first annual report.
15. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.
16. Well Work Over Operations: OCD approval will be obtained from the Director prior to performing remedial work, pressure test or any other Work over. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Artesia District Office.
17. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent overtopping or system failure. All spill collection and/or secondary containment devices will be emptied of fluids within 48 hours of discovery. A record of inspections will be retained on site for a period of five years.
18. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Artesia District Office.
19. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.

Rule 712 Waste: Pursuant to Rule 712, disposal of certain non-domestic waste is allowed at solid waste facilities permitted by the New Mexico Environment Department as long as the waste stream is identified in the discharge plan, and existing process knowledge of the waste stream does not change without notification to the Oil Conservation Division.

20. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.
21. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.
22. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.
23. Storm Water Plan: Key Energy Services, Inc. dba Yale E. Key Inc. will submit in the first annual report a storm water run-off plan for OCD approval.
24. Capacity/ Cavity Configuration and Subsidence Survey: A test or method will be conducted to determine the size and configuration of the mined cavity and a method to detect long-term subsidence. Plans or methods shall be submitted with first annual report for OCD approval.
25. Vadose Zone and Water Pollution: The letter dated December 06, 2001 is considered an investigation and remediation plan submitted pursuant to the discharge plan and all future discoveries of contamination will be addressed through the discharge plan process. The results of the investigation shall be submitted to OCD in the first annual report.
26. Certification: **Key Energy Services, Inc. dba Yale E. Key Inc.** by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. **Key Energy Services, Inc. dba Yale E. Key Inc.** further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Conditions accepted by: **Key Energy Services, Inc. dba Yale E. Key Inc.**

Company Representative- print name

Company Representative- Sign

Title

ATTACHMENT TO THE DISCHARGE PLAN BW-019 RENEWAL
ROWLAND TRUCKING COMPANY
CARLSBAD BRINE STATION
DISCHARGE PLAN APPROVAL CONDITIONS
(December 17, 1996)

1. Rowland Commitments: Rowland will abide by all commitments submitted in the discharge plan renewal application dated September 16, 1996.
2. Production Method: Fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out.
3. Maximum Injection Pressure: The maximum operating injection pressure at the well head will be such that the fracture pressure of the injection formation will not be exceeded. Rowland shall supply and obtain approval for any changes to the approval for the maximum and average injection pressures and injection volumes.
4. Mechanical Integrity Testing: The OCD requires an annual open hole pressure test equal to one and one-half of the normal operating pressure for four hours with ten percent bleed-off allowed. At least once every five years the OCD requires the above mentioned open hole test with zero bleed-off allowed. If zero bleed-off cannot be achieved, the casing will be isolated from the formation and tested to 300 psi for 30 minutes. Prior to commencement of operations and during well workovers, the OCD requires the casing to be isolated from the formation and tested to 300 psi for 30 minutes. The OCD will be notified at least 72 hours prior to all testing.
5. Capacity and Cavity Configuration: A test will be conducted to determine the size and configuration of the salt cavern by December 19, 1997. The method and time of testing will be approved by the OCD prior to performing the test. The OCD will be notified at least 72 hours prior to all testing.
6. Subsidence Survey: Rowland will design and install a series of survey points over the area of the facility and the salt cavern by December 19, 1997 to monitor any future surface subsidence. The location and number of survey points will be approved by the OCD prior to installation. The elevation of all survey points will be monitored annually thereafter. The OCD will be notified at least 72 hours prior to all monitoring.
7. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office quarterly.

The OCD has not received a quarterly report since January 25, 1992 (Fourth quarter, 1991). Please update all delinquent quarterly reports by January 31, 1997.

8. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine by January 31, 1997. Analysis will be for concentrations of Total Dissolved Solids, Sodium, Calcium, Potassium, Magnesium, Bromide, Carbonate/Bicarbonate, Chloride and Sulfate. Include location and method of sampling.
9. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.
10. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.
11. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.
12. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.
13. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.
14. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps. The OCD will be notified at least 72 hours prior to all testing.
15. Underground Process/Wastewater Lines: All underground process/wastewater, and brine transfer pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years thereafter, or prior to discharge plan renewal. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other

means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing.

16. Well Workover Operations: OCD approval will be obtained from the Director prior to performing remedial work or any other workover. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Artesia District Office.

17. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent overtopping or system failure.

Any non-exempt contaminated wastes that are collected at the facility will be tested for hazardous constituents, and after receiving OCD approval, will be disposed of at an OCD approved site.

18. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Artesia District Office.

19. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

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21. Certification: Rowland, by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. Rowland further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Accepted:

ROWLAND TRUCKING COMPANY

by

Title



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

December 17, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-878

Mr. Bob Calhoon
Rowland Trucking Company
418 South Grimes
Hobbs, New Mexico 88240

**RE: Discharge Plan BW-019
Carlsbad Brine Station
Eddy County, New Mexico**

Dear Mr. Calhoon:

The groundwater discharge plan renewal BW-019, for the Rowland Trucking Company (Rowland) Carlsbad Brine Station located in the SE/4 NE/4, of Section 36, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. The application consists of the original discharge plan as approved December 18, 1982; the renewal and modification of the discharge plan as approved December 19, 1986; the renewal as approved November 1, 1991; and the renewal application dated September 16, 1996. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within five working days of receipt of this letter.**

The discharge plan application was submitted pursuant to Section 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations. It is approved pursuant to Section 5101.A. and 3109.C. Please note Section 3109.F., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve Rowland of liability should operations result in pollution of surface or ground waters, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Mr. Bob Calhoon
December 17, 1996
Page 2

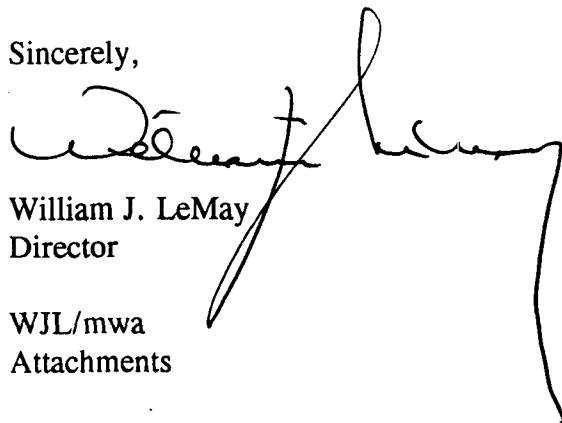
Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C., Rowland is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.G.4., this approval is for a period of five years. This approval will expire December 19, 2001, and an application for renewal should be submitted in ample time before that date. Note that under Section 5101.G. of the regulations, if a discharger submits a discharge plan renewal application at least 180 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved. It should be noted that all discharge plan facilities will be required to submit plans for, or the results of, an underground drainage testing program as a requirement for discharge plan renewal.

The discharge plan application for the Rowland Carlsbad Brine Station is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of \$50 plus a flat fee of \$690 for brine stations. The OCD received the \$50 filing fee and the \$690 flat fee September 20, 1996.

On behalf of the staff of the New Mexico Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

A handwritten signature in black ink, appearing to read 'William J. LeMay', is written over the typed name and title. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

William J. LeMay
Director

WJL/mwa
Attachments

xc: OCD Artesia Office

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Accepted:

ROWLAND TRUCKING COMPANY

by _____
Title

Page 3 of 3

PS Form 3800, April 1995

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