

03

ENTERED



Environmental Protection & Compliance Division
Environmental Compliance Programs (EPC-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

Environmental Management
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87544
(505) 665-5820/Fax (505) 665-5903

Date: NOV 15 2016
Symbol: EPC-DO-16-345
LA-UR: 16-28489
Locates Action No.: U1602175

Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Ms. Hunter:

Subject: Results from Integrity Testing of Distribution Piping from CrEX-1 to CrIN-4 and CrIN-5, Discharge Permit DP-1835, Class V Underground Injection Control Wells

In accordance with Condition No. 3 of Discharge Permit DP-1835, on October 14, 2016, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) submitted a mechanical integrity test method for review and approval by the New Mexico Environment Department (NMED) for the Chromium Pipeline and Infrastructure Project. NMED approved the test method on October 17, 2016 (Enclosure 1). The above-referenced approval letter from NMED contains the following requirement:

- *NMED understands that the procedures described in the workplan are scheduled to be completed in series as segments of piping are installed and UIC wells are completed, and that the Permittees will submit the results of the mechanical integrity testing for each segment within 60 days of each test completion and prior to bringing the segments online.*



DOE/LANS has completed integrity testing of the first segment of distribution piping for the Chromium Pipeline and Infrastructure Project: the 6-in. and 4-in., single-wall, high-density polyethylene (HDPE) pipelines connecting extraction well CrEX-1 with injection wells CrIN-4 and CrIN-5. Enclosure 2 contains inspection reports from the hydrostatic testing of 1665 ft. of 6-in DR-11 HDPE pipe and 150 ft. of 4-in DR-11 HDPE pipe. All test results demonstrated satisfactory pipe integrity per the specified test method.

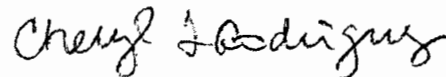
Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding the enclosed test results.

Sincerely,



John C. Bretzke
Division Leader
Environmental Protection & Compliance Division
Los Alamos National Security LLC

Sincerely,



Cheryl L. Rodriguez
Program Manager, FPD-II
Environmental Management
Los Alamos Field Office

JCB:CLR:MTS:RSB/lm

Enclosures:

- (1) October 17, 2016, approval letter from NMED to DOE/LANS regarding integrity testing of distribution piping, DP-1835
- (2) Results from integrity testing of distribution piping from CrEX-1 to CrIN-4 and CrIN-5

Cy: Shelly Lemon, NMED/SWQB, Santa Fe, NM, (E-File)
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)
Stephen M. Yanicak, NMED/DOE/OB, (E-File)
Douglas E. Hintze, EM-LA, (E-File)
David S. Rhodes, EM-LA, (E-File)
Cheryl L. Rodriguez, EM-LA, (E-File)
Paul B. Underwood, EM-LA, (E-File)
Annette E. Russell, EM-LA, (E-File)
Kirsten M. Laskey, EM-LA, (E-File)
Craig S. Leasure, PADOPS, (E-File)
William R. Mairson, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
Randall Mark Erickson, ADEM, (E-File)
Enrique Torres, ADEM, (E-File)
Bruce Robinson, ADEM-PO, (E-File)
Stephani F. Swickley, ADEM-PO, (E-File)

Ms. Michelle Hunter
EPC-DO-16-345

- 3 -

Cy (continued):

Danny Katzman, ADEM-PO, (E-File)

Gerald F. Fordham, ER-ES, (E-File)

Michael T. Saladen, EPC-CP, (E-File)

Robert S. Beers, EPC-CP, (E-File)

Ellena I. Martinez, EPC-CP, (E-File)

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COPY



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GROUND WATER

NOV 15 2016

BUREAU

Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Ms. Hunter:

Subject: Results from Integrity Testing of Distribution Piping from CrEX-1 to CrIN-4 and CrIN-5, Discharge Permit DP-1835, Class V Underground Injection Control Wells

In accordance with Condition No. 3 of Discharge Permit DP-1835, on October 14, 2016, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) submitted a mechanical integrity test method for review and approval by the New Mexico Environment Department (NMED) for the Chromium Pipeline and Infrastructure Project. NMED approved the test method on October 17, 2016 (Enclosure 1). The above-referenced approval letter from NMED contains the following requirement:

- *NMED understands that the procedures described in the workplan are scheduled to be completed in series as segments of piping are installed and UIC wells are completed, and that the Permittees will submit the results of the mechanical integrity testing for each segment within 60 days of each test completion and prior to bringing the segments online.*

ENCLOSURE 1

October 17, 2016, approval letter from NMED to
DOE/LANS regarding integrity testing of
distribution piping, DP-1835

EPC-DO-16-345

LA-UR-16-28489

Locates Action No.: U1602175

Date: NOV 15 2016



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Harold Runnels Building

1190 South St. Francis Drive (87505)
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Phone (505) 827-2900 Fax (505) 827-2965

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BUTCH TONGATE
Cabinet Secretary - Designate

J.C. BORREGO
Acting Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

October 17, 2016

Mr. Robert S. Beers, LANS-EPC-CP
Los Alamos National Security, LLC
P.O. Box 1663 MS K490
Los Alamos, NM 87545

RE: Mechanical Integrity Testing, Los Alamos National Laboratory Underground Injection Control Wells, Discharge Permit 1835

Dear Mr. Beers:

On August 4, 2016, the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) received a Chromium Piping and Infrastructure Project Workplan (workplan) from DOE/LANS (the Permittees) describing the design plans and specifications of distribution piping for the underground injection control (UIC) wells regulated by Discharge Permit DP-1835 (EPC-DO-16-219). Condition 3 of DP-1835 requires the workplan for mechanical integrity testing of the distribution piping and injection wells associated with the permit.

NMED understands that the procedures described in the workplan are scheduled to be completed in series as segments of piping are installed and UIC wells are completed, and that the Permittees will submit the results of the mechanical integrity testing for each segment within 60 days of each test completion and prior to bringing the segments online.

The workplan proposes to hydrostatically test each single wall pipe and interior "carrier" pipe of a double wall system with potable water to a maximum pressure of 225 pounds per square inch (psi) and observe pressures for a minimum of one hour. The test is considered a failure and discontinued if pressure drops more than 10% over the course of the test period. The double wall pipe "containment" pipe will be pneumatically tested to 10 psi and observed for a minimum of two hours. If containment pressure drops but carrier pressure remains zero psi, the containment pipe is determined to be leaking and marked for failure. If containment pipe pressure drops and

carrier pipe pressure increases, the carrier pipe is determined to be leaking and marked for failure. Failed systems will be evaluated for integrity, repaired, and retested.

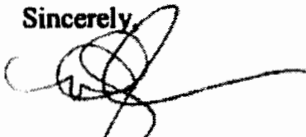
Hydrostatic testing water is to be dechlorinated and discharged to existing stormwater detention basins that have been constructed at each of the well pads where piping will be installed. The project is covered under the NPDES Construction General Permit and a Storm Water Pollution Prevention Plan under the NPDES General Permit.

The workplan is approved as submitted for mechanical integrity testing of individual segments of pipe infrastructure as required for DP-1835. NMED requests that a workplan and schedule for mechanical integrity testing of the UIC wells proposed under DP-1835 be submitted for NMED approval as that becomes available.

Approval of this workplan does not relieve the Permittees of the responsibility to comply with any other applicable federal, state, and/or local laws and regulations. This approval also does not relieve the Permittees of liability should operations associated with this workplan result in actual pollution of ground or surface waters.

If you have any questions, please contact Greg Huey at (505) 827-6891. Thank you for your cooperation.

Sincerely



Michelle Hunter, Chief
Ground Water Quality Bureau

MH:gmh

cc (e-version):

Shelly Lemon, NMED/SWQB
John Kieling, NMED/HWB
Steven Yanicak, NMED/DOEOB
Steven Huddleson, NMED/GWQB
Kathryn Hayden, NMED/GWQB
Cheryl Rodriguez (cheryl.rodriguez@em.doe.gov)
Terrell W. Lemke (tlemke@lanl.gov)
Jacob Lamar Knight (jknight@lanl.gov)
John Phillip Branch (jbranch@lanl.gov)
Stephani Fuller Swickley (sfuller@lanl.gov)
Jacob William Meadows (jmeadows@lanl.gov)
Danny Katzman, (katzman@lanl.gov)
Gerald Fordham, (gfordham@lanl.gov)

ENCLOSURE 2

**Results from integrity testing of distribution piping from
CrEX-1 to CrIN-4 and CrIN-5**

EPC-DO-16-345

LA-UR-16-28489

Locates Action No.: U1602175

Date: NOV 15 2016



IBC/Owner's Inspection Report

Owner IBC: 2009 Edition 2015 Edition Report Number: INP-103371-00006
 Project or job ID#: 103371 Date: 11/02/2016
 Work Order #: N/A Charge Code: 21PDA0 SRCH 08BF 4QAO
 Project Name: Chromium Piping Infrastructure Design-Build Project Location: TA05 Mortandad Canyon

Type of Inspection:

Choose a Discipline Mechanical	Choose Turnover Package NA	Choose a System NA
Choose an Owner's Type LANL Construction Inspector	Choose an IBC Inspection Type	Choose a System
Choose an Owner's Type	Choose an IBC Inspection Type	Choose a System
<input type="checkbox"/> Direct Hire <input checked="" type="checkbox"/> Subcontractor/Vendor Work performed by: SET, Inc.		

Specifications:
22-0813

Drawings:
C57368-DWG-05INFR-C-1005

Codes:
NMED Construction
Programs Bureau,
Recommended Standards
for Water Facilities-2008

Short Description:

Hydrostatic pressure test on approx. 160 ft. of 4" HDPE piping from CrIN-4 vault to CrIN-5 vault

Inspection. Attachments YES NO Concise description of the item(s) inspected and inspection status:

On the above date, I witnessed the hydrostatic pressure test performed on approx. 160 feet of 4" dia. DR11 HDPE pipe. This section of piping runs approx. from the CrIN-4 vault to the CrIN-5 vault at R-50, off Mortandad Canyon Road. This hydrostatic pressure test was conducted in accordance with ASTM F2164, as required in Spec. 22-0813 and by pipe manufacturer's instructions. This section of piping was properly filled, vented, and pipe and water allowed to equalize in temperature prior to beginning the initial expansion phase of the test. During the initial expansion phase, the test section of piping was pressurized (and pressure maintained) to 235 psig for the specified 4 hours. At the conclusion of the initial expansion phase, the pressure was reduced to 225 psig (the required test pressure) and monitored for 1 hour. There was no reduction in pressure during the duration of this phase of the test - there was an increase in pressure to 236 psig, due to ambient temperature change. Test met the Pass/Fail Criteria required by ASTM F2164. See attached Pressure Test Data Sheet, as well as copy of SET, Inc.'s report and other attachments for additional information.

Correction Needed. N/A Estimate correction time, include photographs if possible: NCR? YES NO

Corrections Completed. N/A Include associated previous report number and NCR number if applicable:

Test Type: Choose a Test Type Hydrostatic

Test Acceptable: YES NO

M&TE used during inspection or test: N/A

all pressure testing equipment supplied by SET, Inc.

Equipment ID	Equipment Description	Cal Date	Cal Due Date
105230	0-300 psi analog pressure gauge	05/06/2016	05/06/2017

Additional Comments.

see attachments for additional information.



IBC/Owner's Inspection Report

To the Best of my knowledge, work inspected was in accordance with approval project plans and specifications, applicable codes and engineering design except as noted above.

Inspector:

Timothy M Donovan

Timothy M Donovan

11/03/2016

Level 1 Level 2

Print

Signature

Date

Digitally signed by Timothy M Donovan
DN: cn=Timothy M Donovan, o=LANL,
email=timdon@lanl.gov, c=US
Reason: I am the author of this document
Date: 2016.11.03 09:04:48 -0500

Level 2 Reviewer:

(Required if Inspector is Level 1)

Accept Reject

Print

Signature

Date



IBC/Owner's Inspection Report

<input checked="" type="checkbox"/> Owner	IBC: <input type="checkbox"/> 2009 Edition <input type="checkbox"/> 2015 Edition	Report Number:	INP-103371-00003
Project or job ID#: 103371		Date: 10/03/2016	
Work Order #:	N/A	Charge Code:	21PDA0 SRCH 08BF 4QAO
Project Name:	Chromium Piping Infrastructure Design-Build Project	Location:	TA05 Mortandad Canyon

Type of Inspection:

Choose a Discipline Mechanical	Choose Turnover Package NA	Choose a System NA
Choose an Owner's Type LANL Construction Inspector	Choose an IBC Inspection Type	Choose a System
Choose an Owner's Type	Choose an IBC Inspection Type	Choose a System
<input type="checkbox"/> Direct Hire <input checked="" type="checkbox"/> Subcontractor/Vendor Work performed by: SET, Inc.		

 Specifications:
22-0813

 Drawings:
C57386-DWG-05INFR-C-1005

 Codes:
NMED Construction
Programs Bureau,
Recommended Standards
for Water Facilities-2006

Short Description:

Hydrostatic pressure test on approx. 735 ft. of 6" HDPE piping at CrIN4/5 well pad

Inspection. Attachments YES NO Concise description of the item(s) inspected and inspection status:

On the above date, I witnessed the hydrostatic pressure test performed on approx. 735 ft. of 6" dia. DR11 HDPE pipe. This section of piping runs approx. from the CrIN-4/5 well pad to the cutoff at R-50 (heading to Mortandad Canyon Road). This hydrostatic pressure test was conducted in accordance with ASTM F2164, as required in Spec. 22-0813 and by pipe manufacturer's instructions. This section of piping was properly filled, vented, and pipe and water allowed to equalize in temperature prior to beginning the initial expansion phase of the test. During the initial expansion phase, the test section of piping was pressurized (and pressure maintained) to 235 psig for the specified 4 hours. At the conclusion of the initial expansion phase, the pressure was reduced to 225 psig (the required test pressure) and monitored for 1 hour. There was no reduction in pressure during the duration of this phase of the test - there was an increase in pressure to 229 psig, due to ambient temperature change. Test met the Pass/Fail Criteria required by ASTM F2164. See attached Pressure Test Data Sheet, as well as copy of SET, Inc.'s report and other attachments for additional information.

Correction Needed. N/A Estimate correction time, include photographs if possible: NCR? YES NO

Corrections Completed. N/A Include associated previous report number and NCR number if applicable:

Test Type: Choose a Test Type Hydrostatic

 Test Acceptable: YES NO

 M&TE used during inspection or test: N/A

all pressure testing equipment supplied by SET, Inc.

Equipment ID	Equipment Description	Cal Date	Cal Due Date
CR01	0-300 psi analog pressure gauge	08/31/2016	08/31/2017

Additional Comments.

see attachments for additional information.



IBC/Owner's Inspection Report

To the Best of my knowledge, work inspected was in accordance with approval project plans and specifications, applicable codes and engineering design except as noted above.

Inspector:

Timothy M Donovan

Timothy M Donovan

Digitally signed by Timothy M Donovan
DN: cn=Timothy M Donovan, o=LANL,
email=timothy.donovan@lanl.gov,
c=US
Reason: I am the author of this document
Date: 2016.10.04 10:22:16 -0500

10/04/2016

Level 1 Level 2

Print

Signature

Date

Level 2 Reviewer:

(Required if Inspector is Level 1)

Accept Reject

Print

Signature

Date



IBC/Owner's Inspection Report

Owner IBC: 2009 Edition 2015 Edition Report Number: INP-103371-00004

 Project or job ID#: 103371 Date: 10/12/2016
 Work Order #: N/A Charge Code: 21PDA0 SRCH 08BF 4QAO
 Project Name: Chromium Piping Infrastructure Design-Build Project Location: TA05 Mortandad Canyon

Type of Inspection:

Choose a Discipline Mechanical	Choose Turnover Package NA	Choose a System NA
Choose an Owner's Type LANL Construction Inspector	Choose an IBC Inspection Type	Choose a System
Choose an Owner's Type	Choose an IBC Inspection Type	Choose a System

Direct Hire Subcontractor/Vendor Work performed by: SET, Inc.

Specifications: 22-0813 Drawings: C57366-DWG-05INFR-C-1006 Codes: NMED Construction Programs Bureau, Recommended Standards for Water Facilities-2006

Short Description:

Hydrostatic pressure test on approx. 720 ft. of 6" HDPE piping from CrIN-4/5 cutoff to CrEX-1 pad

Inspection. Attachments YES NO Concise description of the item(s) inspected and inspection status:
 On the above date, I witnessed the hydrostatic pressure test performed on approx. 720 ft. of 6" dia. DR11 HDPE pipe. This section of piping runs approx. from the CrIN-4/5 well cutoff at R-50 to CrEX-1 pad on Mortandad Canyon Road. This hydrostatic pressure test was conducted in accordance with ASTM F2164, as required in Spec. 22-0813 and by pipe manufacturer's instructions. This section of piping was properly filled, vented, and pipe and water allowed to equalize in temperature prior to beginning the initial expansion phase of the test. During the initial expansion phase, the test section of piping was pressurized (and pressure maintained) to 235 psig for the specified 4 hours. At the conclusion of the initial expansion phase, the pressure was reduced to 225 psig (the required test pressure) and monitored for 1 hour. There was no reduction in pressure during the duration of this phase of the test - there was an increase in pressure to 228 psig, due to ambient temperature change. Test met the Pass/Fail Criteria required by ASTM F2164. See attached Pressure Test Data Sheet, as well as copy of SET, Inc.'s report and other attachments for additional information.

Correction Needed. N/A Estimate correction time, include photographs if possible: NCR? YES NO

Corrections Completed. N/A Include associated previous report number and NCR number if applicable.

Test Type: Choose a Test Type Hydrostatic **Test Acceptable:** YES NO

M&TE used during inspection or test: N/A

all pressure testing equipment supplied by SET, Inc.

Equipment ID	Equipment Description	Cal Date	Cal Due Date
CR01	0-300 psi analog pressure gauge	08/31/2016	08/31/2017

Additional Comments.
 see attachments for additional information.



IBC/Owner's Inspection Report

To the Best of my knowledge, work inspected was in accordance with approval project plans and specifications, applicable codes and engineering design except as noted above.

Inspector:	Timothy M Donovan	Timothy M Donovan	10/013/2016
Level 1 <input type="checkbox"/> Level 2 <input checked="" type="checkbox"/>	Print	Signature	Date
Level 2 Reviewer: (Required if Inspector is Level 1)			
Accept <input type="checkbox"/> Reject <input type="checkbox"/>			
	Print	Signature	Date

Digitally signed by Timothy M Donovan
DN: cn=Timothy M Donovan, o=LANL,
email=timothy.donovan@lanl.gov, c=US
Reason: I am the author of the document
Date: 2016.10.13 12:25:00 -0500



IBC/Owner's Inspection Report

Owner IBC: 2009 Edition 2015 Edition Report Number: INP-103371-00005

 Project or job ID#: 103371 Date: 11/02/2016
 Work Order #: N/A Charge Code: 21PDA0 SRCH 08BF 4QAO
 Project Name: Chromium Piping Infrastructure Design-Build Project Location: TA05 Mortandad Canyon

Type of Inspection:

Choose a Discipline Mechanical	Choose Turnover Package NA	Choose a System NA
Choose an Owner's Type LANL Construction Inspector	Choose an IBC Inspection Type	Choose a System
Choose an Owner's Type	Choose an IBC Inspection Type	Choose a System
<input type="checkbox"/> Direct Hire <input checked="" type="checkbox"/> Subcontractor/Vendor Work performed by: SET, Inc.		

Specifications:
22-0813

Drawings:
C57368-DWG-05INFR-C-1008

Codes:
NMED Construction
Programs Bureau,
Recommended Standards
for Water Facilities-2008

Short Description:

Hydrostatic pressure test on approx. 210 ft. of 6" HDPE piping from CrEX-1 treatment container up to first 6" isolation valve uphill, towards cutoff to CrIN-4/5 pad

Inspection. Attachments YES NO Concise description of the item(s) inspected and inspection status:

On the above date, I witnessed the hydrostatic pressure test performed on approx. 210 feet of 6" dia. DR11 HDPE pipe. This section of piping runs approx. from the CrEX-1 treatment container up to the first 6" isolation valve uphill, towards cutoff to CrIN4/5. This hydrostatic pressure test was conducted in accordance with ASTM F2164, as required in Spec. 22-0813 and by pipe manufacturer's instructions. This section of piping was properly filled, vented, and pipe and water allowed to equalize in temperature prior to beginning the initial expansion phase of the test. During the initial expansion phase, the test section of piping was pressurized (and pressure maintained) to 235 psig for the specified 4 hours. At the conclusion of the initial expansion phase, the pressure was reduced to 225 psig (the required test pressure) and monitored for 1 hour. There was a reduction in pressure during the test phase of the test - there was a decrease in pressure to 217 psig, due to ambient temperature change. ASTM F 2164 allows for no more than a 5% drop in pressure. Test met the Pass/Fail Criteria required by ASTM F2164. See attached Pressure Test Data Sheet, as well as copy of SET, Inc.'s report and other attachments for additional information.

Correction Needed. N/A Estimate correction time, include photographs if possible: NCR? YES NO

Corrections Completed. N/A Include associated previous report number and NCR number if applicable:

Test Type: Choose a Test Type Hydrostatic

Test Acceptable: YES NO

M&TE used during inspection or test: N/A

all pressure testing equipment supplied by SET, Inc.

Equipment ID	Equipment Description	Cal Date	Cal Due Date
CR01	0-300 psi analog pressure gauge	08/31/2016	08/31/2017

Additional Comments.

see attachments for additional information.



IBC/Owner's Inspection Report

To the Best of my knowledge, work inspected was in accordance with approval project plans and specifications, applicable codes and engineering design except as noted above.

Inspector:	Timothy M Donovan	Timothy M Donovan	11/03/2016
Level 1 <input type="checkbox"/> Level 2 <input checked="" type="checkbox"/>	Print	Signature	Date

Digitally signed by Timothy M Donovan
DN: cn=Timothy M Donovan, o=LA-C&E,
email=timdon@lanl.gov, c=US
Reason: I am the author of this document
Date: 2016.11.03 09:21:04 -0500

Level 2 Reviewer: (Required if Inspector is Level 1)			
Accept <input type="checkbox"/> Reject <input type="checkbox"/>	Print	Signature	Date