



NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO CHANGE AN EXISTING WATER RIGHT (Non 72-12-1)

(check applicable boxes):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

<input checked="" type="checkbox"/> Change Purpose of Use <input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Surface Water <input type="checkbox"/> Change Place of Use <input type="checkbox"/> Groundwater <input type="checkbox"/> Surface Water	<input type="checkbox"/> Change Point of Diversion (POD): From: <input type="checkbox"/> Groundwater <input type="checkbox"/> Surface Water To: <input type="checkbox"/> Groundwater <input type="checkbox"/> Surface Water	<input checked="" type="checkbox"/> Additional Groundwater Point of Diversion (POD) <input type="checkbox"/> Additional Surface Water Point of Diversion (POD)
<input type="checkbox"/> Temporary Change, NMSA 1978, § 72-12-7(B) Requested Start Date: (Not to Exceed 3 ac-ft in One Year)	Requested End Date:	
<input type="checkbox"/> Water Use Lease, NMSA 1978, §§ 72-6-1 to-7 Requested Start Date:	Requested End Date:	

1. APPLICANT(S) (Required) Note: water-right owner must be listed as an applicant.

Name: U.S. Department of Energy, Environmental Management, Los Alamos Field Office and Incorporated County of Los Alamos	
Contact or Agent: Douglas E. Hintze, Manager check here if Agent <input type="checkbox"/>	Additional Contact: Cheryl Rodriguez, Program Manager
Mailing Address: 1900 Diamond Drive, MS-M984	Mailing Address: 1900 Diamond Drive, MS-M984
City: Los Alamos	City: Los Alamos
State: NM Zip Code: 87544	State: NM Zip Code: 87544
Phone: <input type="checkbox"/> Home <input type="checkbox"/> Cell Phone (Work): (505) 665-5658	Phone: (505) 414-0450 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell Phone (Work): 505-665-5330
E-mail (optional):	E-mail (optional): cheryl.rodriguez@em.doe.gov

2. CURRENT OSE FILE INFORMATION (Required)

OSE File No(s): RG 00485-S-6 and -S-7; RG 00486, RG 00486-S, RG 00486-S-2, -S-3, and -S-4; RG 00487, RG 00487-S, -S-2, -S-3 and -S-4; RG 00488, SP 01503, and SP 01802, 01802 Amended, 01802-B and -C	Priority Date (if known): 03/14/1922 (168.1 af); 01/31/1948 (50 af); 06/03/1955 (remainder, 5,323.2 af)	Subfile/Cause No. (if applicable):
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3. CURRENT PURPOSE OF USE AND AMOUNT OF WATER (Required)

<input type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Irrigation <input checked="" type="checkbox"/> Municipal <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Other Use (specify): Uses at Los Alamos National Laboratory	Amount of Water (acre-feet per annum): If more details are needed, type "See Comments" in "Other" field below, and explain in Additional Statements Section. Diversion: 679 ac ft/year Consumptive Use: _____ Other (include units): _____
Describe a specific use If applicable (i.e. sand & gravel washing, dairy etc):	

{00641915-1}FOR OSE INTERNAL USE

Application for Permit, Form wr-06, Rev 9/26/12

File No.:	Trn. No.:	Receipt No.: 6-44166
Trans Description (optional):		Sub-Basin:
PCW/LOG Due Date:	PBU Due Date:	

4. COUNTY WHERE WATER RIGHT IS CURRENTLY USED (Required)

Los Alamos County

5. ADDITIONAL STATEMENTS CONCERNING THE CURRENT WATER RIGHT

[Empty box for additional statements]

6. CURRENT or MOVE-FROM POINT(S) OF DIVERSION (POD) (Required)

Surface POD OR Ground Water POD (Well)

Name of ditch, acequia, or spring:

Stream or water course: Los Alamos Canyon, Guaje Canyon, Water Canyon, Mother Lift Tributary of:

If application proposes a new point of diversion involving a diversion dam, storage dam, main canal, and/or pipeline, complete Attachment 2. Check here if Attachment 2 is included in this application packet.

POD Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84). District II (Roswell) & District VII (Cimarron) customers, provide a PLSS location in addition to above.

- NM State Plane (NAD83) (Feet)
 - NM West Zone
 - NM East Zone
 - NM Central Zone
- UTM (NAD83) (Meters)
 - Zone 12N
 - Zone 13N
- Lat/Long (WGS84) (to the nearest 1/10th of second)

POD Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (Quarters or Halves, Section, Township, Range) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
RG 00485-S-6 (Otowi 1)	1649396.25	1772232.12	
RG 00485-S-7 (Otowi 4)	1637337.37	1772995.12	
RG 00486 (Guaje 5A)	1644877.21	1789636.00	
RG 00486-S (Guaje 4A)	1647318.22	1787112.89	
RG 00486-S-2 (Guaje 3A)	1649661.54	1786585.25	

NOTE: If more PODS need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
 Additional point of diversion descriptions are attached: Yes No If yes, how many 11

Point of Diversion is on Land Owned by: **Applicants and Bandelier National Monument**

Other description relating point of diversion to common landmarks, streets, or other: **Los Alamos County**

FOR OSE INTERNAL USE

Application for Permit, Form wr-06

File Number:	Trn Number:
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7. CURRENT or MOVE-FROM PLACE(S) OF USE (Required)

The land is legally described by (check all that apply):

Public Land Survey System (PLSS) (quarters, section, township, range) Hydrographic Survey Report or Map

Irrigation or Conservation District Map Subdivision

Grant

Complete the blocks below for all tracts of land (more than one description can be provided for a tract if available):

PLSS Quarters or Halves, <u>and/or</u> Name of Hydrographic Survey, <u>and/or</u> Name of Irrigation or Conservation District, <u>and/or</u> Name and County of Subdivision <u>and/or</u> Grant	PLSS Section <u>and/or</u> Map No. <u>and/or</u> Lot No.	PLSS Township <u>and/or</u> Tract No. (Please list each tract individually) <u>and/or</u> Block No.	PLSS Range	Acres	Priority
Los Alamos County Service Area (See Attachment 1)	19	19N	07E		2013 JAN 24 PM 2:09
	20	19N	07E		
	31	19N	07E		
	32	19N	07E		
	33	19N	07E		
	34	19N	07E		
	3	18N	07E		
	4	18N	07E		
	5	18N	07E		
	6	18N	07E		
	7	18N	07E		
	8	18N	07E		
	9	18N	07E		
	16	18N	07E		
17	18N	07E			

Acres: **Total**

Other description relating place of use to common landmarks, streets, or other: **SEE ATTACHMENT 1, SECTION 7 CONTINUATION SHEETS 1-4**

Place of use is on land owned by (required): **U.S. Department of Energy, Los Alamos County and Bandelier National Monument**

Are there other sources of water for these lands? No Yes describe by OSE file number:

Note: If on Federal or State Land, please provide copy of lease.

FOR OSE INTERNAL USE Application for Permit, Form wr-06

File Number:	Trn Number:
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8. MOVE-TO PURPOSE OF USE AND AMOUNT OF WATER (Complete this section ONLY if the purpose of use is changing)

<input type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Irrigation <input checked="" type="checkbox"/> Municipal <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Other Use (specify): <u>Uses at Los Alamos National Laboratory and Groundwater Remediation</u> Describe a specific use if applicable (i.e. sand & gravel washing, dairy etc):	Amount of Water (acre-feet per annum): <i>If more details are needed, type "See Comments" in "Other" field below, and explain in Additional Statements Section.</i> Diversion: <u>679 ac-ft/year</u> Consumptive Use: _____ Other (include units): _____
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9. MOVE-TO POINT(S) OF DIVERSION (POD) (Complete this section ONLY if adding or replacing a POD)

<input checked="" type="checkbox"/> Surface POD OR <input checked="" type="checkbox"/> Ground Water POD (Well)			
Name of ditch, acequia, or spring:			
Stream or water course:		Tributary of:	
If application proposes a new point of diversion involving a diversion dam, storage dam, main canal, and/or pipeline, complete Attachment 2. <input type="checkbox"/> Check here if Attachment 2 is included in this application packet.			
POD Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84). District II (Roswell) & District VII (Cimarron) customers, provide a PLSS location in addition to above.			
<input checked="" type="checkbox"/> NM State Plane (NAD83) (Feet) <input type="checkbox"/> NM West Zone <input type="checkbox"/> NM East Zone <input checked="" type="checkbox"/> NM Central Zone		<input type="checkbox"/> UTM (NAD83) (Meters) <input type="checkbox"/> Zone 12N <input type="checkbox"/> Zone 13N	
		<input type="checkbox"/> Lat/Long (WGS84) (to the nearest 1/10 th of second)	
POD Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (Quarters or Halves, Section, Township, Range) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
Refer to Section 6 of application and pages 1 and 2 of Attachment 1 (wr-08) for existing POD information			
RG 94875 (CrEX-1)	1638440.00	1767520.74	
RG 96564 POD 2 (CrEX-2)	1637239.14	1767946.86	
RG 95804 (CrEX-3)	1638929.08	1768105.42	
Monitoring Well R-42	1637709.96	1768775.73	
NOTE: If more PODS need to be described, complete form WR-08 (Attachment 1 – POD Descriptions) Additional POD descriptions are attached: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how many <u>22 24</u> <i>QUM 06/17/20</i>			
Other description relating point(s) of diversion to common landmarks, streets, or other: The additional points of diversion are located at LANL, Mortandad and Sandia Canyons, in Technical Areas 05, 53 and 72. See Attachment 2 for maps.			
Point of Diversion is on Land Owned by: U.S. Department of Energy			
Note: The following information is for wells only. If more than one (1) well needs to be described, provide attachment.			
Approximate depth of well (feet): See Attachment 3		Outside diameter of well casing (inches): See Attachment 3	
Driller Name: See Attachment 3		Driller License Number: See Attachment 3	
If replacing the current well, is the current well to be plugged? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable If No, state for what use it is retained:			

FOR OSE INTERNAL USE

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10. MOVE-TO PLACE(S) OF USE (Complete this section ONLY if adding or changing a place of use)

List each individually

The land is legally described by (check all that apply):

Public Land Survey System (PLSS) (quarters, section, township, range) Hydrographic Survey Report or Map

Irrigation or Conservation District Map Subdivision

Grant

Complete the blocks below for all tracts of land (more than one description can be provided for a tract if available):

PLSS Quarters or Halves, <u>and/or</u> Name of Hydrographic Survey, <u>and/or</u> Name of Irrigation or Conservation District, <u>and/or</u> Name and County of Subdivision <u>and/or</u> Grant	PLSS Section <u>and/or</u> Map No. <u>and/or</u> Lot No.	PLSS Township <u>and/or</u> Tract No. (Please list each tract individually) <u>and/or</u> Block No.	PLSS Range	Acres	Priority
Total Acres:					

Other description relating place of use to common landmarks, streets, or other:

Place of use is on land owned by (required):

Are there other sources of water for these lands? No Yes describe by OSE file number:

Note: If on Federal or State Land, please provide copy of lease.

11. ADDITIONAL STATEMENTS OR EXPLANATIONS

The applicants are requesting 1) to change the purpose of use for groundwater to add the purpose of groundwater remediation and 2) to add groundwater Points of Diversion (PODs) to access existing permitted water rights in support of the Interim Measure for Chromium Plume Control and Chromium Plume-Center Characterization for control and further characterization of hexavalent chromium contaminated groundwater beneath the Los Alamos National Laboratory. Applicants do not intend to increase diversion amount over permitted amount.

Applicants intend to seek approval of a return flow credit plan at a later date. Impacts to the Rio Grande will be offset in an amount and manner approved by the State Engineer.

2010 JUN 24 PM 2:02
 STATE ENGINEER
 NEW MEXICO

FOR OSE INTERNAL USE

Application for Permit, Form wr-06

File Number:	Trn Number:
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LIST OF ATTACHMENTS:

Attachment 1 – OSE form wr-06 Section 7 continuation sheets and OSE form WR-08, Point of Diversion Descriptions (9 pages)

Attachment 2 – Maps of Existing and Proposed Additional Points of Diversion (2 pages)

Attachment 3 – Section 9 of Application Continued (1 page)

FOR OSE INTERNAL USE

Application for Permit, Form wr-06

File Number:	Trn Number:
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Attachment 1

To U.S. Department of Energy and Incorporated County of Los Alamos
Application for Permit to Change an Existing Water Right (Non 72-12-1)
January 2019

OSE Form WR-06 Section 7 Continuation Sheets
OSE Form WR-08 Point of Diversion Descriptions

The land is legally described by (check all that apply):

- Public Land Survey System (PLSS) (quarters, section, township, range)
- Hydrographic Survey Report or Map
- Irrigation or Conservation District Map
- Subdivision
- Grant

Complete the blocks below for all tracts of land (more than one description can be provided for a tract if available):

PLSS Quarters or Halves, <u>and/or</u> Name of Hydrographic Survey, <u>and/or</u> Name of Irrigation or Conservation District, <u>and/or</u> Name and County of Subdivision <u>and/or</u> Grant	PLSS Section <u>and/or</u> Map No. <u>and/or</u> Lot No.	PLSS Township <u>and/or</u> Tract No. (Please list each tract individually) <u>and/or</u> Block No.	PLSS Range	Acres	Priority
Los Alamos County Service Area (See Attached Section 7 Map)	18	18N	07E		2019 JAN 24 PM 2:09
	19	18N	07E		
	20	18N	07E		
	1	19N	06E		
	2	19N	06E		
	3	19N	06E		
	4	19N	06E		
	5	19N	06E		
	8	19N	06E		
	9	19N	06E		
	10	19N	06E		
	11	19N	06E		
	12	19N	06E		
	13	19N	06E		
	14	19N	06E		
	15	19N	06E		
16	19N	06E			
Total Acres:					

Other description relating place of use to common landmarks, streets, or other:

Place of use is on land owned by (required): **U.S. Department of Energy, Los Alamos County and Bandelier National Monument**

Are there other sources of water for these lands? No Yes describe by OSE file number:

The land is legally described by (check all that apply):

Public Land Survey System (PLSS) (quarters, section, township, range)

Hydrographic Survey Report or Map

Irrigation or Conservation District Map

Subdivision

Grant

Complete the blocks below for all tracts of land (more than one description can be provided for a tract if available):

PLSS Quarters or Halves, <u>and/or</u> Name of Hydrographic Survey, <u>and/or</u> Name of Irrigation or Conservation District, <u>and/or</u> Name and County of Subdivision <u>and/or</u> Grant	PLSS Section <u>and/or</u> Map No. <u>and/or</u> Lot No.	PLSS Township <u>and/or</u> Tract No. (Please list each tract individually) <u>and/or</u> Block No.	PLSS Range	Acres	Priority
Los Alamos County Service Area (See Attached Section 7 Map)	17	19N	06E		2019 JAN 24 PM 2:09
	18	19N	06E		
	19	19N	06E		
	20	19N	06E		
	21	19N	06E		
	22	19N	06E		
	23	19N	06E		
	24	19N	06E		
	26	19N	06E		
	27	19N	06E		
	28	19N	06E		
	29	19N	06E		
	30	19N	06E		
	31	19N	06E		
32	19N	06E			
33	19N	06E			
				Total Acres:	

Other description relating place of use to common landmarks, streets, or other:

Place of use is on land owned by (required): **U.S. Department of Energy, Los Alamos County and Bandelier National Monument**

Are there other sources of water for these lands? No Yes describe by OSE file number:

The land is legally described by (check all that apply):

Public Land Survey System (PLSS) (quarters, section, township, range)

Hydrographic Survey Report or Map

Irrigation or Conservation District Map

Subdivision

Grant

Complete the blocks below for all tracts of land (more than one description can be provided for a tract if available):

PLSS Quarters or Halves, <u>and/or</u> Name of Hydrographic Survey, <u>and/or</u> Name of Irrigation or Conservation District, <u>and/or</u> Name and County of Subdivision <u>and/or</u> Grant	PLSS Section <u>and/or</u> Map No. <u>and/or</u> Lot No.	PLSS Township <u>and/or</u> Tract No. (Please list each tract individually) <u>and/or</u> Block No.	PLSS Range	Acres	Priority
Los Alamos County Service Area (See Attached Section 7 Map)	34	19N	06E		
	35	19N	06E		
	36	19N	06E		
	1	18N	06E		
	2	18N	06E		
	3	18N	06E		
	4	18N	06E		
	10	18N	06E		
	11	18N	06E		
	12	18N	06E		
	13	18N	06E		
	14	18N	06E		
	24	18N	06E		
	10	19N	05E		
	36	19N	05E		
Total Acres:					

Other description relating place of use to common landmarks, streets, or other:

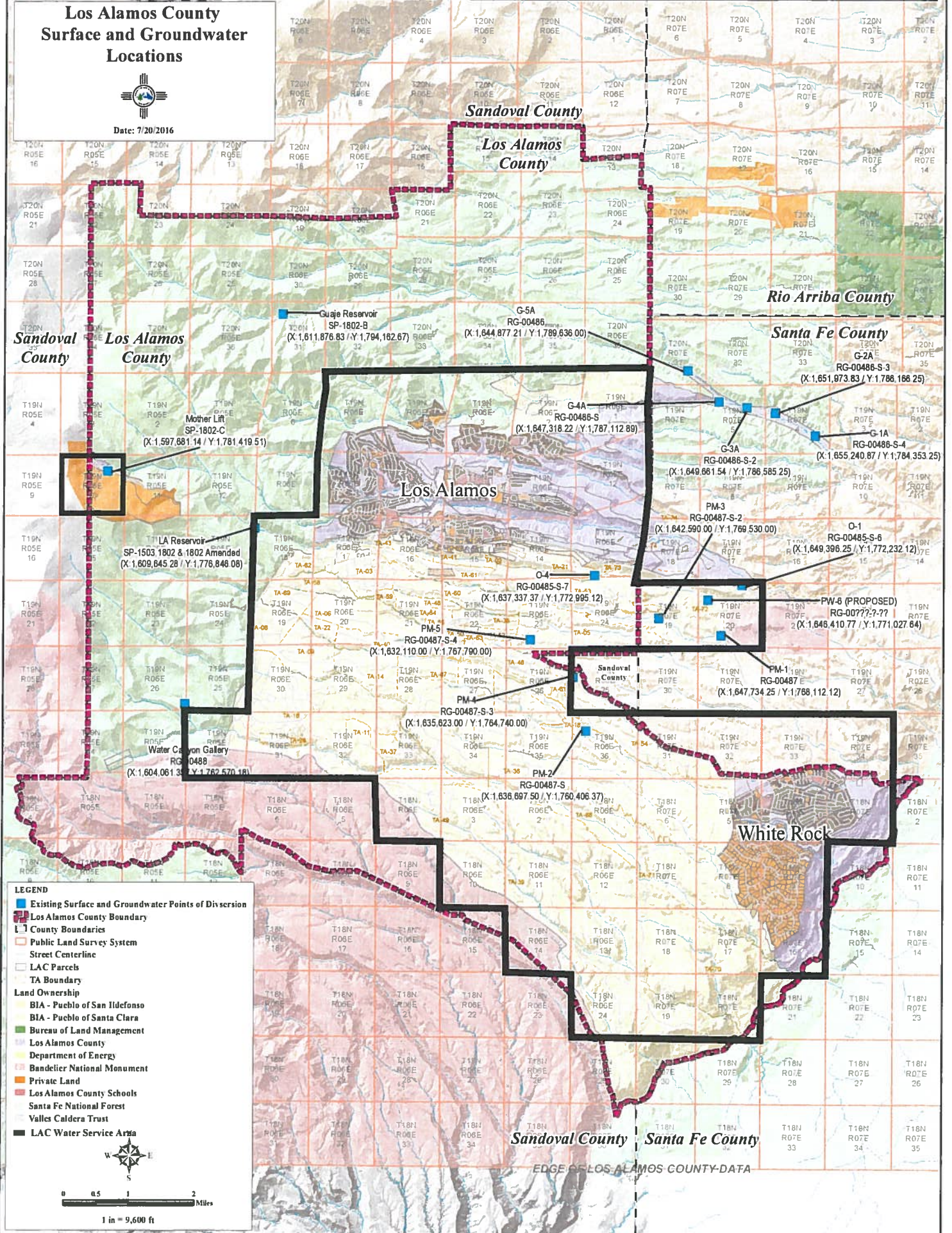
Place of use is on land owned by (required): **U.S. Department of Energy, Los Alamos County and Bandelier National Monument**

Are there other sources of water for these lands? No Yes describe by OSE file number:

Los Alamos County Surface and Groundwater Locations



Date: 7/20/2016



LEGEND

- Existing Surface and Groundwater Points of Diversion
- Los Alamos County Boundary
- County Boundaries
- Public Land Survey System Street Centerline
- LAC Parcels
- TA Boundary

Land Ownership

- BIA - Pueblo of San Ildefonso
- BIA - Pueblo of Santa Clara
- Bureau of Land Management
- Los Alamos County
- Department of Energy
- Bandelier National Monument
- Private Land
- Los Alamos County Schools
- Santa Fe National Forest
- Valles Caldera Trust
- LAC Water Service Area

0 0.5 1 2 Miles
1 in = 9,600 ft

Guaje Reservoir
SP-1802-B
(X:1,611,876.83 / Y:1,764,162.67)

G-5A
RG-00486
(X:1,644,877.21 / Y:1,769,636.00)

Mother Lift
SP-1802-C
(X:1,597,681.14 / Y:1,781,419.51)

G-4A
RG-00486-S
(X:1,647,318.22 / Y:1,787,112.89)

G-2A
RG-00486-S-3
(X:1,651,973.83 / Y:1,786,168.25)

LA Reservoir
SP-1503 1802 & 1802 Amended
(X:1,609,645.28 / Y:1,776,846.08)

G-3A
RG-00486-S-2
(X:1,649,661.54 / Y:1,786,585.25)

G-1A
RG-00486-S-4
(X:1,655,240.87 / Y:1,784,353.25)

PM-3
RG-00487-S-2
(X:1,642,590.00 / Y:1,769,530.00)

O-1
RG-00485-S-6
(X:1,649,396.25 / Y:1,772,232.12)

Water Canyon Gallery
RG-00488
(X:1,604,061.31 / Y:1,782,570.18)

PM-5
RG-00487-S-4
(X:1,632,110.00 / Y:1,767,790.00)

PM-1
RG-00487
(X:1,647,734.25 / Y:1,768,112.12)

PW-6 (PROPOSED)
RG-00777-7-77
(X:1,646,410.77 / Y:1,771,027.64)

PM-4
RG-00487-S-3
(X:1,635,623.00 / Y:1,764,740.00)

PM-2
RG-00487-S
(X:1,636,697.50 / Y:1,760,406.37)

EDGE OF LOS ALAMOS COUNTY-DATA



NEW MEXICO OFFICE OF THE STATE ENGINEER



ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS Continuation Sheet (1 of 5)

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

a. Is this a: <input checked="" type="checkbox"/> Move-From Point of Diversion(s) <input type="checkbox"/> Move-To Point of Diversion(s)		b. Information on Attachment(s): Number of points of diversion involved in the application: <u>42 44 QM</u> Total number of pages attached to the application: <u>5 wr-08</u> pages	
<input checked="" type="checkbox"/> Surface Point of Diversion OR <input checked="" type="checkbox"/> Well			
Name of ditch, acequia, or spring:			
Stream or water course:		Los Alamos Canyon, Guaje Canyon, Water Canyon, Mother Lift	
Tributary of:			
c. Location (Required): Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), <u>or</u> Lat/Long (WGS84)			
NM State Plane (NAD83) (feet) NM West Zone <input type="checkbox"/> NM Central Zone <input checked="" type="checkbox"/> NM East Zone <input type="checkbox"/>	UTM (NAD83) (meters) Zone 13N <input type="checkbox"/> Zone 12N <input type="checkbox"/>	<input type="checkbox"/> Lat/Long-- (WGS84) 1/10 th of second	OTHER (allowable only for move-from descriptions - see application form for format) <input type="checkbox"/> PLSS (quarters, section, township, range) <input type="checkbox"/> Hydrographic Survey, Map & Tract <input type="checkbox"/> Lot, Block & Subdivision <input type="checkbox"/> Grant
POD Number: RG 00486-S-3 (Guaje 2A)	X or Longitude 1651973.83	Y or Latitude 1786166.25	Other Location Description:
POD Number: RG 00486-S-4 (Guaje 1A)	X or Longitude 1655240.87	Y or Latitude 1784353.25	Other Location Description:
POD Number: RG 00487 (Pajarito 1)	X or Longitude 1647734.25	Y or Latitude 1768112.12	Other Location Description:
POD Number: RG 00487-S (Pajarito 2)	X or Longitude 1636697.50	Y or Latitude 1760406.37	Other Location Description:
POD Number: RG 00487-S-2 (Pajarito 3)	X or Longitude 1642590.00	Y or Latitude 1769530.00	Other Location Description:
POD Number: RG 00487-S-3 (Pajarito 4)	X or Longitude 1635623.00	Y or Latitude 1764740.00	Other Location Description:
POD Number: RG 00487-S-4 (Pajarito 5)	X or Longitude 1632110.00	Y or Latitude 1767790.00	Other Location Description:
POD Number: RG 00488 (Water Canyon Gallery)	X or Longitude 1604061.35	Y or Latitude 1762570.18	Other Location Description:
POD Number: SP- 1503, 1802 & 1802 Amended (LA Reservoir)	X or Longitude 1609645.28	Y or Latitude 1776846.08	Other Location Description:

FOR OSE INTERNAL USE

Form wr-08

POD DESCRIPTIONS - ATTACHMENT 1

File Number:	Tm Number:
Trans Description (optional):	



NEW MEXICO OFFICE OF THE STATE ENGINEER



ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS Continuation Sheet (2 of 5)

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

a. Is this a: <input checked="" type="checkbox"/> Move-From Point of Diversion(s) <input type="checkbox"/> Move-To Point of Diversion(s)		b. Information on Attachment(s): Number of points of diversion involved in the application: <u>42-44 am</u> Total number of pages attached to the application: <u>5 wr-08 pages</u>	
<input checked="" type="checkbox"/> Surface Point of Diversion		OR	
		<input checked="" type="checkbox"/> Well	
Name of ditch, acequia, or spring:			
Stream or water course:		Los Alamos Canyon, Guaje Canyon, Water Canyon, Mother Lift	
Tributary of:			
c. Location (Required): Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), <u>or</u> Lat/Long (WGS84)			
NM State Plane (NAD83) (feet) NM West Zone <input type="checkbox"/> NM Central Zone <input checked="" type="checkbox"/> NM East Zone <input type="checkbox"/>	UTM (NAD83) (meters) Zone 13N <input type="checkbox"/> Zone 12N <input type="checkbox"/>	<input type="checkbox"/> Lat/Long- (WGS84) 1/10 th of second	OTHER (allowable only for move-from descriptions - see application form for format) <input type="checkbox"/> PLSS (quarters, section, township, range) <input type="checkbox"/> Hydrographic Survey, Map & Tract <input type="checkbox"/> Lot, Block & Subdivision <input type="checkbox"/> Grant
POD Number: SP- 1802-B (Guaje Reservoir)	X or Longitude 1611876.83	Y or Latitude 1794162.67	Other Location Description:
POD Number: SP- 1802-C (Mother Lift)	X or Longitude 1597681.14	Y or Latitude 1781419.51	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:

2019 JAN 21 PM 2:10

FOR OSE INTERNAL USE

Form wr-08

POD DESCRIPTIONS - ATTACHMENT 1

File Number:	Trm Number:
Trans Description (optional):	



NEW MEXICO OFFICE OF THE STATE ENGINEER



ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS Continuation Sheet (3 of 5)

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

a. Is this a: <input type="checkbox"/> Move-From Point of Diversion(s) <input checked="" type="checkbox"/> Move-To Point of Diversion(s)		b. Information on Attachment(s): Number of points of diversion involved in the application: <u>42 44 dm</u> Total number of pages attached to the application: <u>5 wr-08</u> pages	
<input type="checkbox"/> Surface Point of Diversion OR <input checked="" type="checkbox"/> Well			
Name of ditch, acequia, or spring:			
Stream or water course:			
Tributary of:			
c. Location (Required): Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)			
NM State Plane (NAD83) (feet) NM West Zone <input type="checkbox"/> NM Central Zone <input checked="" type="checkbox"/> NM East Zone <input type="checkbox"/>	UTM (NAD83) (meters) Zone 13N <input type="checkbox"/> Zone 12N <input type="checkbox"/>	<input type="checkbox"/> Lat/Long- (WGS84) 1/10 th of second	OTHER (allowable only for move-from descriptions - see application form for format) <input type="checkbox"/> PLSS (quarters, section, township, range) <input type="checkbox"/> Hydrographic Survey, Map & Tract <input type="checkbox"/> Lot, Block & Subdivision <input type="checkbox"/> Grant
POD Number: Monitoring Well R-28	X or Longitude 1638988.73	Y or Latitude 1768358.57	Other Location Description:
POD Number: Monitoring Well R-43	X or Longitude 1637236.21	Y or Latitude 1769614.70	Other Location Description:
POD Number: Monitoring Well R-44	X or Longitude 1640061.34	Y or Latitude 1767109.85	Other Location Description:
POD Number: Monitoring Well R-45	X or Longitude 1640249.62	Y or Latitude 1768017.72	Other Location Description:
POD Number: Monitoring Well R-50	X or Longitude 1638666.13	Y or Latitude 1767087.32	Other Location Description:
POD Number: RG 92877 POD1 (Monitoring Well R-62)	X or Longitude 1635537.94	Y or Latitude 1767441.01	Other Location Description:
POD Number: Monitoring Well SCI-2	X or Longitude 1637155.34	Y or Latitude 1769651.16	Other Location Description:
POD Number: Monitoring Well R-15	X or Longitude 1635308.60	Y or Latitude 1768272.50	Other Location Description:
POD Number: RG 92604 POD1 (Monitoring Well R-61)	X or Longitude 1637096.80	Y or Latitude 1767422.46	Other Location Description:

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POD DESCRIPTIONS - ATTACHMENT 1

File Number:	Trn Number:
Trans Description (optional):	



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ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS Continuation Sheet (4 of 5)

This Attachment is to be completed if more than one (1) point of diversion is described on an Application or Declaration.

a. Is this a: <input type="checkbox"/> Move-From Point of Diversion(s) <input checked="" type="checkbox"/> Move-To Point of Diversion(s)		b. Information on Attachment(s): Number of points of diversion involved in the application: <u>42-440m</u> Total number of pages attached to the application: <u>5 wr-08</u> pages	
<input type="checkbox"/> Surface Point of Diversion OR <input checked="" type="checkbox"/> Well			
Name of ditch, acequia, or spring:			
Stream or water course:			
Tributary of:			
c. Location (Required): Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)			
NM State Plane (NAD83) (feet) NM West Zone <input type="checkbox"/> NM Central Zone <input checked="" type="checkbox"/> NM East Zone <input type="checkbox"/>	UTM (NAD83) (meters) Zone 13N <input type="checkbox"/> Zone 12N <input type="checkbox"/>	<input type="checkbox"/> Lat/Long- (WGS84) 1/10 th of second	OTHER (allowable only for move-from descriptions - see application form for format) <input type="checkbox"/> PLSS (quarters, section, township, range) <input type="checkbox"/> Hydrographic Survey, Map & Tract <input type="checkbox"/> Lot, Block & Subdivision <input type="checkbox"/> Grant
POD Number: RG 95048 POD 1 (CrCH-1) (Piezometer CrPZ-1)	X or Longitude 1637124.35	Y or Latitude 1767900.50	Other Location Description:
POD Number: RG 95048 POD 2 (CrCH-2) (2 Piezometers [CrPZ-2a and -2b])	X or Longitude 1638605.92	Y or Latitude 1768405.91	Other Location Description:
POD Number: RG 95048 POD 3 (CrCH-3) (Piezometer CrPZ-3)	X or Longitude 1637453.68	Y or Latitude 1768810.44	Other Location Description:
POD Number: RG 95048 POD 4 (CrCH-4) (Piezometer CrPZ-4)	X or Longitude 1636544.02	Y or Latitude 1768687.20	Other Location Description:
POD Number: RG 95048 POD 5 (CrCH-5) (Piezometer CrPZ-5)	X or Longitude 1636111.20	Y or Latitude 1768474.02	Other Location Description:
POD Number: RG 95858 POD 1 (CrIN-1 Injection Well)	X or Longitude 1640094.53	Y or Latitude 1768269.94	Other Location Description:
POD Number: RG 95858 POD 2 (CrIN-2 Injection Well)	X or Longitude 1639899.55	Y or Latitude 1767839.35	Other Location Description:
POD Number: RG 95870 POD 1 (CrIN-3 Angle Injection Well)	X or Longitude 1639994.53	Y or Latitude 1767088.56	Other Location Description: Coordinates at well head
POD Number: RG 95870 POD 2 (CrIN-4 Angle Injection Well)	X or Longitude 1638871.15	Y or Latitude 1767039.45	Other Location Description: Coordinates at well head

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POD DESCRIPTIONS - ATTACHMENT 1

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Trans Description (optional):	



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ATTACHMENT 1 POINT OF DIVERSION DESCRIPTIONS

Continuation Sheet (5 of 5)

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a. Is this a: <input type="checkbox"/> Move-From Point of Diversion(s) <input checked="" type="checkbox"/> Move-To Point of Diversion(s)		b. Information on Attachment(s): Number of points of diversion involved in the application: <u>42-44 ON</u> Total number of pages attached to the application: <u>5 wr-08</u> pages	
<input type="checkbox"/> Surface Point of Diversion OR <input checked="" type="checkbox"/> Well			
Name of ditch, acequia, or spring:			
Stream or water course:			
Tributary of:			
c. Location (Required): Required: Move to POD location coordinate must be either New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84)			
NM State Plane (NAD83) (feet) NM West Zone <input type="checkbox"/> NM Central Zone <input checked="" type="checkbox"/> NM East Zone <input type="checkbox"/>	UTM (NAD83) (meters) Zone 13N <input type="checkbox"/> Zone 12N <input type="checkbox"/>	<input type="checkbox"/> Lat/Long- (WGS84) 1/10 th of second	OTHER (allowable only for move-from descriptions - see application form for format) <input type="checkbox"/> PLSS (quarters, section, township, range) <input type="checkbox"/> Hydrographic Survey, Map & Tract <input type="checkbox"/> Lot, Block & Subdivision <input type="checkbox"/> Grant
POD Number: RG 95870 POD 3 (CrIN-5 Angle Injection Well)	X or Longitude 1638675.22	Y or Latitude 1767030.28	Other Location Description: Coordinates at well head
POD Number: RG 96564 POD 1 (CrEX-5 Angle Extraction Well)	X or Longitude 1640180.19	Y or Latitude 1768283.85	Other Location Description: Coordinates at well head
POD Number: RG 96564 POD 3 (CrEX-4 Extraction Well)	X or Longitude 1638049.19	Y or Latitude 1768288.31	Other Location Description:
POD Number: <u>RG 97398 POD2</u> R-70 (Angle Monitoring Well, <u>RG Number Pending</u>)	X or Longitude 1640801.26 <u>1,640,836.63</u>	Y or Latitude 1768206.00 <u>1,769,195.35</u>	Other Location Description: Coordinates at well head
POD Number: <u>R6 485 POD12</u> R-71 Angle Monitoring Well	X or Longitude <u>1,635,749.94</u>	Y or Latitude <u>1,769,483.94</u>	Other Location Description: <u>Coordinates at well head</u>
POD Number: <u>R6 485 POD13</u> R-72 Monitoring well	X or Longitude <u>1,635,592.44</u>	Y or Latitude <u>1,769,483.94</u>	Other Location Description: <u>Coordinates at well head</u>
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:
POD Number:	X or Longitude	Y or Latitude	Other Location Description:

cm
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POD DESCRIPTIONS - ATTACHMENT 1

File Number:	Trm Number:
Trans Description (optional):	

Attachment 2

To U.S. Department of Energy and Incorporated County of Los Alamos
Application for Permit to Change an Existing Water Right (Non 72-12-1)

January 2019

Maps of Existing and Proposed Additional Groundwater Points of Diversion

Figure 1 Attachment 2

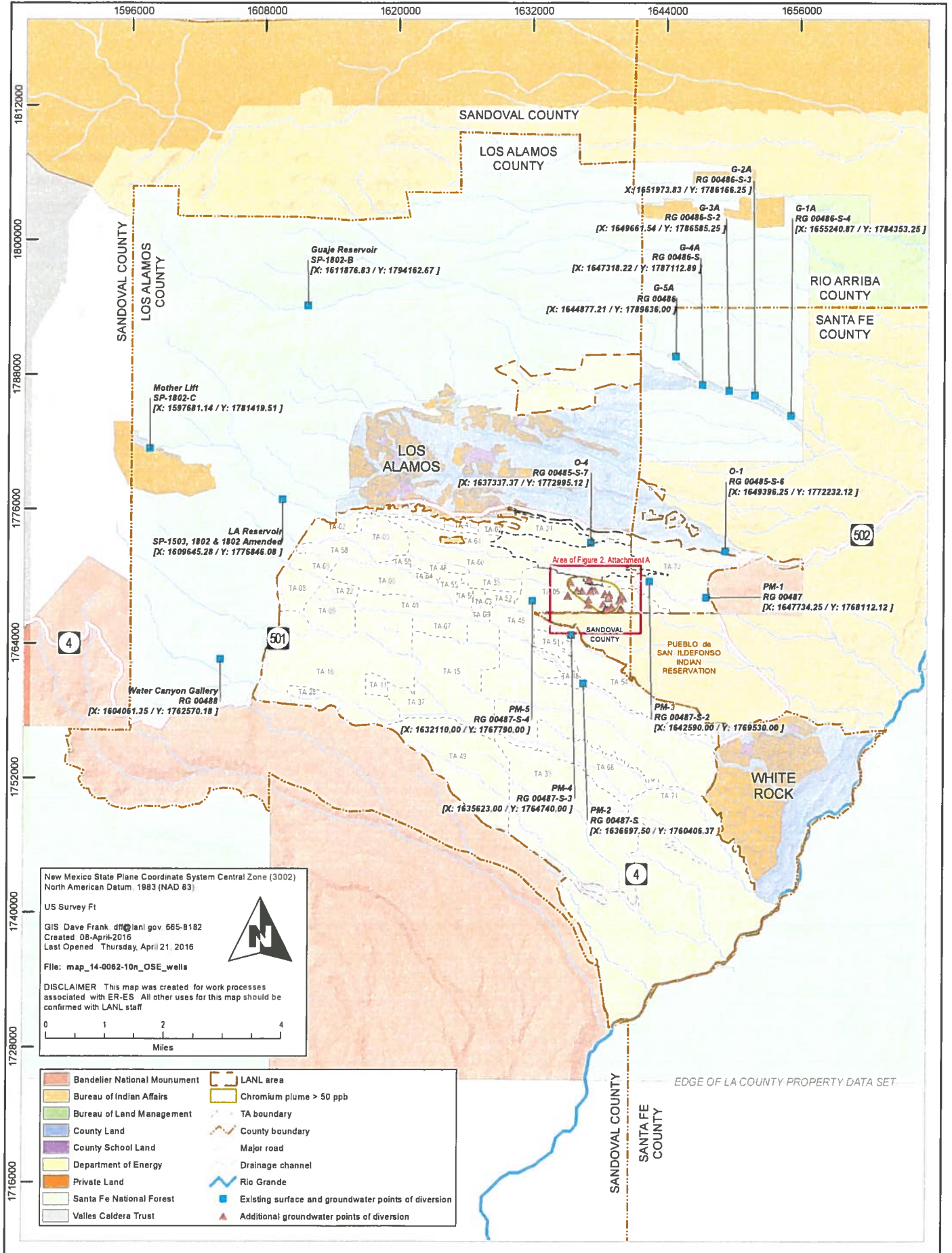
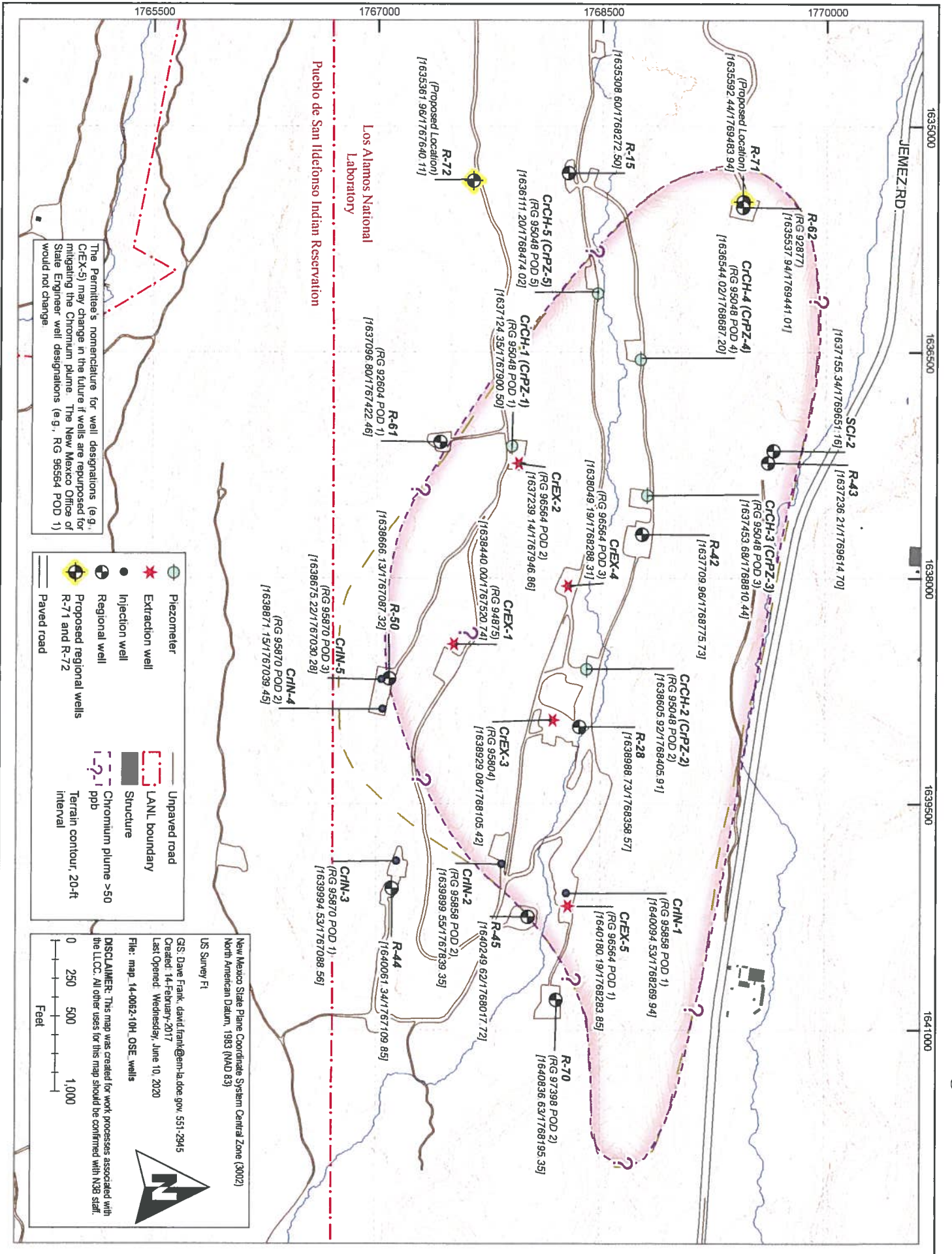


Figure 2 Attachment 2



Attachment 3

To U.S. Department of Energy and
Incorporated County of Los Alamos
Application for Permit to Change an Existing Water Right
(Non 72-12-1)

January 2019

OSE Form WR-06 Section 9 continued

Section 9 of the Application continued: Move-to Points of Diversion (POD)

POD/Well Number	Approximate Depth of Well	Outside Diameter of Well Casing (inches)	Driller Name	Driller License Number (if planned) OR Completion Date
RG 94875 (CrEX-1)	990	8.62	Yellow Jacket Drilling	08/17/2014
RG 96564 POD 2 (CrEX-2)	1113	8.62	Holt Services	WD-1759
RG 95804 (CrEX-3)	898	8.62	Yellow Jacket Drilling	WD-1458
RG 96564 POD 3 (CrEX-4)	920.02	8.62	Holt Services	WD-1759
RG 96564 POD 1 (CrEX-5, angle)	~878.9 ^a	8.62	Holt Services	WD-1458
R-42	931.8	5.56	Boart Longyear Co.	08/27/2008
R-28	934.3	5.0	Water Development Co., (out of business)	12/17/2003
R-43 (2 screen)	903.9/969.1	5.56	Boart Longyear Co.	10/17/2008
R-44 (2 screen)	895/985.3	5.56	Boart Longyear Co.	01/15/2009
R-45 (2 screen)	888/974.9	5.56	Boart Longyear Co.	01/24/2009
R-50 (2 screen)	1077/1185	5.56	Boart Longyear Co.	2/13/2010
RG 92877 POD1 (R-62)	1158.4	5.56	Yellow Jacket Drilling	10/03/2011
SCI-2	548	2.375	Boart Longyear Co.	8/31/2008
R-15	958.6	5.56	Dynatek	09/1999
RG 92604 POD1 (R-61, 2 screen)	1125.0/1220.4	5.56	Boart Longyear Co.	05/03/2011
RG 95048 POD1 (CrCH-1/CrPZ-1)	1122.9	2.375	Yellow Jacket Drilling	11/08/2014
RG 95048 POD2 (CrCH-2/CrPZ-2a & 2b)	909.8/944.0	2.375	Yellow Jacket Drilling	01/19/2015
RG 95048 POD3 (CrCH-3/CrPZ-3)	939.4	2.375	Yellow Jacket Drilling	12/09/2014
RG 95048 POD4 (CrCH-4/CrPZ-4)	957	2.375	Yellow Jacket Drilling	03/03/2015
RG 95048 POD5 (CrCH-5/CrPZ-5)	976	2.375	Yellow Jacket Drilling	03/16/2015
RG 95858 (CrIN-1)	871.4	8.62	Yellow Jacket Drilling	WD-1458
RG 95858 POD2 (CrIN-2)	899.1	8.62	Yellow Jacket Drilling	WD-1458
RG 95870 (CrIN-3, angle)	~888.2 ^a	8.62	Holt Services	WD-1759
RG 95870 POD2 (CrIN-4, angle)	~1059.1 ^a	8.62	Holt Services	WD-1759
RG 95870 POD3 (CrIN-5, angle)	~1050.5 ^a	8.62	Holt Services	WD-1759
R-70 (RG Pending) <i>RG 97398 POD2</i>	<i>997</i>	8.62	<i>Holt Services</i>	<i>WD-1759</i>

^a Vertical depth to middle of screen below ground surface.

^b TBD – To be determined.

angle

RG 485 POD 12 (R-71, angle) TBD	8.62	TBD	TBD
RG 485 POD 13 (R-72, angle) TBD	8.62	TBD	TBD

Enclosure 2
Reference Material

To U.S. Department of Energy and Incorporated County of Los Alamos Submittal of
Application for Permit to Change an Existing Water Right (Non 72-12-1)

January 2019

I. Background

Los Alamos National Laboratory (LANL) is a multidisciplinary research facility, owned by the U.S. Department of Energy (DOE) and managed and operated by Triad National Security, LLC, located in north-central New Mexico approximately 60 miles northeast of Albuquerque and 20 miles northwest of Santa Fe, within the incorporated County of Los Alamos and Santa Fe County. Groundwater sampling data from monitoring wells at LANL indicate the presence of chromium contamination in the regional aquifer resulting from historical use (1956–1972) of potassium dichromate, a corrosion inhibitor, in cooling-tower water that was discharged to an outfall as part of operational maintenance activities. Recent groundwater monitoring well data show increasing chromium concentrations on the plume edges (sidegradient and downgradient), which is indicative of plume migration or expansion. In accordance with the 2016 Compliance Order on Consent (Consent Order) with the New Mexico Environment Department, the DOE Environmental Management Los Alamos Field Office (EM-LA) and their Los Alamos Legacy Cleanup Contractor Newport News Nuclear BWXT – Los Alamos, LLC (N3B) are required to assess, identify, clean up, and otherwise address contamination at LANL. DOE EM-LA and N3B are moving forward to implement an interim measure to limit downgradient migration of the chromium plume edge in the regional aquifer through hydraulic control while further characterizing the plume-center in order to identify remedial alternatives to address the entire plume.

II. Overview

The additional groundwater points of diversion (PODs) are a required component of plume control and characterization, and will be used to facilitate hydraulic capture of a chromium contaminant plume located within the regional aquifer and to study the feasibility of remediation technologies. Implementation of the interim measure for plume control and plume-center characterization will fall under the requested additional purpose of use of groundwater remediation. The chromium project is being conducted under the direction and oversight of the New Mexico Environment Department.

Extraction wells will extract the majority of the total volume of groundwater for the project. The injection wells will have some water extraction associated with maintenance activities. The remaining additional groundwater PODs are permitted groundwater monitoring wells or piezometers, limiting the appropriated beneficial use of water to 10 days. In order to perform extended testing of the wells, they are included as additional groundwater PODs under the application.

The extraction wells will be used to facilitate hydraulic control of the chromium contaminant plume; in addition, extraction well (CrEX-3) and the monitoring wells and piezometers included in this application will be used to study feasibility of remediation technologies. The monitoring wells will be used for testing on a limited basis, are part of the chromium groundwater monitoring program at LANL and will continue as such through the testing phases. Eventually, these wells will revert completely back to being used as monitoring wells, sampled on a quarterly basis as they are currently permitted. The primary objective is to

achieve hydraulic control of off-site plume migration. The injection wells also provide a means of disposition of treated groundwater diverted from characterization extraction and testing.

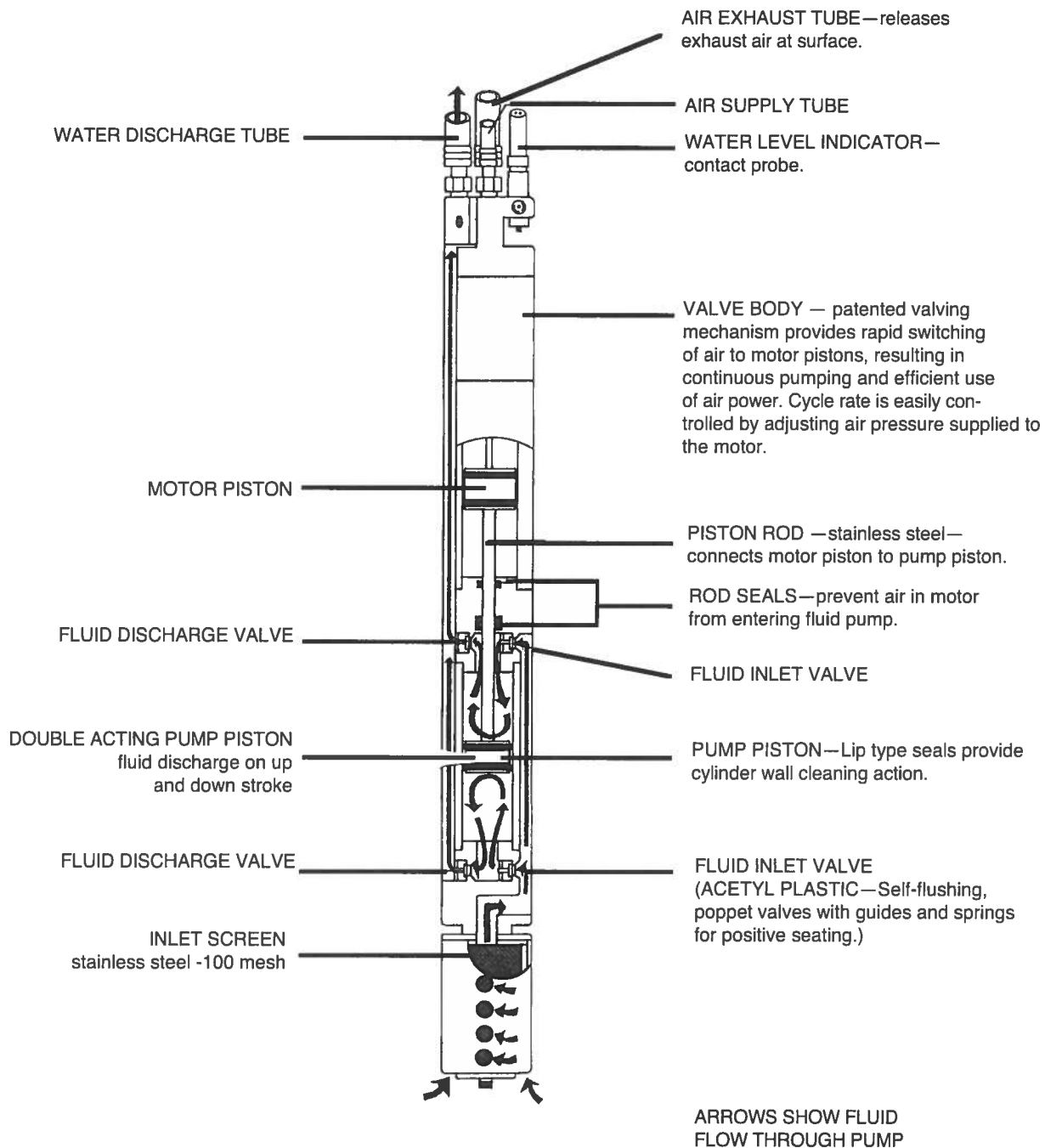
Monthly water production reporting will be provided through the Los Alamos County Utilities Department in a manner acceptable to the State Engineer.

III. Proposed Alternative Diversion Measurement for Piezometers

Five of the additional groundwater PODs are piezometers (outer diameter of 2.375 inches). The piezometers (CrCH-1/CrPZ-1 through CrCH-5/CrPZ-5) are part of the interim measure and characterization, equipped with transducers, and are largely used for pressure response information with occasional sampling. The piezometers are outfitted with dedicated Bennett Pumps and tubing bundles that produce intentionally low flows. Often, totalizing meters are inaccurate at the lowest and highest margins of their respective ranges. These locations purge at approximately 0.5 gpm through flexible tubing. Purge rates this low, combined with flexible tubing, will create difficulties for metering and the associated plumbing that would be required. Any meter would have to be temporarily installed for each sampling or extended pumping event because a meter cannot be accommodated within the current wellhead surface completions.

For reasons stated above, applicants propose and request approval to measure water purged for sampling and extended pumping purposes by using an arithmetic method using purge rate and time to calculate the volume of water purged before sampling or during extended pumping. This proposed approach for calculating purged volume will yield volume totals at least as accurate as meters. Figures 1 through 4 provide information related to the sampling systems.

Bennett Sample Pumps have automatic reciprocating piston motors, operated by compressed air, that generate power for operating a double acting, piston fluid pump. Models for lifts up to 500 feet have one motor piston; Models for lifts up to 1000 feet have two motor pistons, providing increased power for operating the pump. All models have a differential ratio between the motor pistons and the pump to accomplish lifts using low pressure air from small compressors.



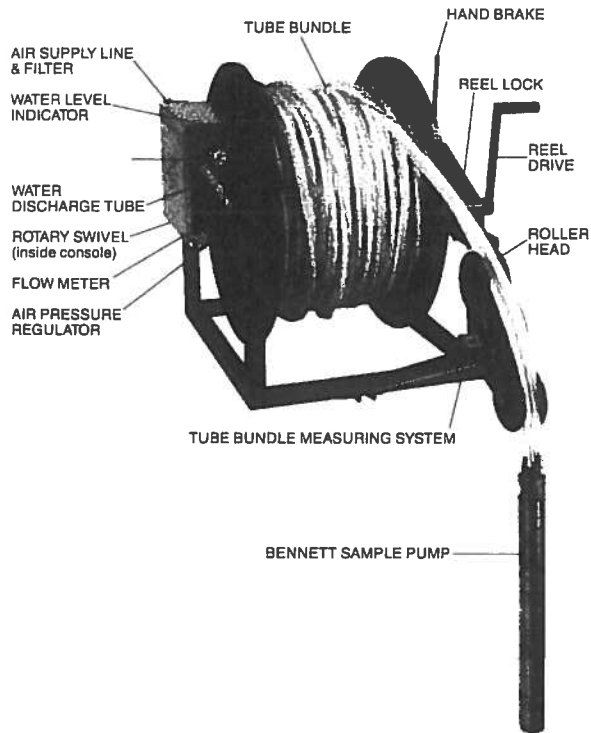
Bennett Pumps may be operated in any position from horizontal to vertical. These pumps will operate submerged to great depths or above water with a drop tube attached to the fluid inlet.

Bennett Sample Pumps may be used as portable units, capable of sampling multiple boreholes, or used in dedicated well systems. They are constructed to permit easy dis-assembly in the field for cleaning and replacement of pump seals and valves, using ordinary tools. Repair kits containing all parts for re-conditioning the pump are available. Pump body, piston and piston rod are made of stainless steel.

FIGURE 2. PIEZOMETER BENNETT SAMPLE PUMP INFORMATION

Bennett Sample Pump Units

A pump unit for applications where portability is required. Each unit consists of a Bennett Pump, a tube bundle (choice of length and materials) and a tube bundle reel. The reel is equipped with all controls for operating the pump. The portable units are completely assembled, tested and shipped ready for use.



Tube Bundle—Construction—stainless steel cable core, polypropylene air supply and air exhaust tubes, choice of materials for water discharge tube, electric cord for water level indicator, nylon wire ties to hold bundle together (PVC tape wrap optional).

Water Level Indicator System—A sonar alarm sounds when probe installed in pump head touches water. System powered by a 6 volt battery inside console.

Rotary Swivel—Installed on reel axle, eliminates disconnecting lines when setting pump.

Flow Meter—Monitors pump discharge rate .2 to 2.0 gpm.

Air Pressure Regulator & Gage—Adjustable for controlling pump discharge.

Hand Brake—Controls lowering speed into borehole.

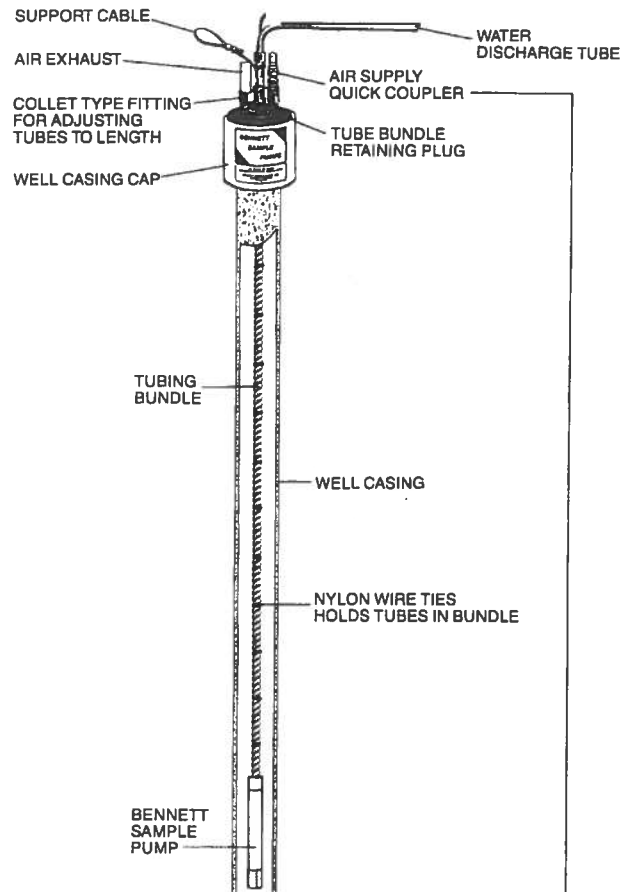
Reel Drive—Sprocket and chain drive with reduction ratio for hand crank operation. Power drive system available for larger reels.

Reel Lock—Holds pump in fixed position in borehole.

Roller Head—Guides tube bundle into borehole.

Tube Bundle Measuring System—A mechanical counter attached to the measuring wheel reads in feet & tenths.

A dedicated well system consists of a Bennett Sample Pump, a tube bundle (made to required length), a well casing cap and tube bundle retaining plug. Tube bundles are shipped on wooden spools with all fittings installed for easy installation.



HAND HELD AIR PRESSURE REGULATOR WITH HOSE AND QUICK COUPLER



FIGURE 3. PIEZOMETER BENNETT SAMPLE PUMP TUBE BUNDLE

Bennett Sample Pumps

U.S. Patent No. 4295801 • Canadian Patent Nos. 1166075 & 1187331

MODELS 180 & 1800 (for 2" and larger wells)

SPECIFICATIONS

PUMP MODEL NO.	DIAMETER	LENGTH	WEIGHT	MOTOR CYLINDERS	PISTON STROKE	PISTON CYCLES PER MINUTE
180	1.8"	1 9.625"	10.5 lbs.	1	3"	Variable from 0 to 90 CPM
1800	1.8"	23.625"	13 lbs.	2	3"	maxium

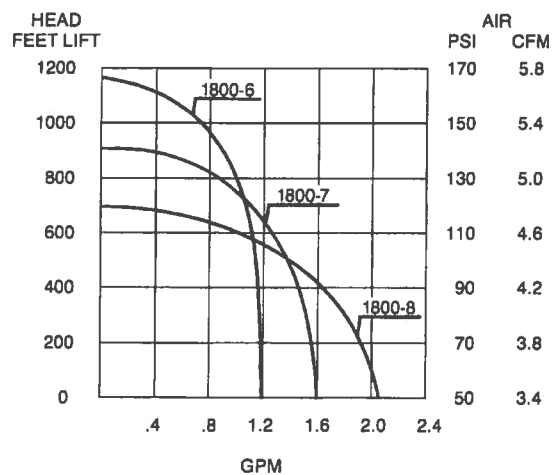
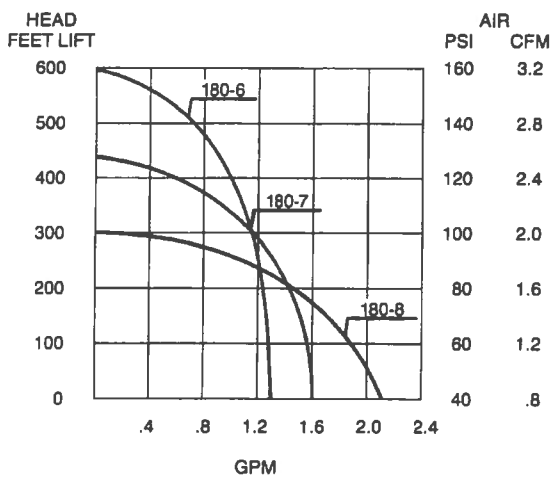
Materials of Construction: 303 and 304 Stainless Steel

Model 180 and 1800 pumps are equipped with a 1" diameter pump piston for maximum flow rates at low pumping lifts. Intermediate lifts require a 7/8" diameter pump piston that reduces the flow rate. High lift applications require a 3/4" diameter pump piston with further reductions in pump flow rate.

PUMP PERFORMANCE CURVES COMPRESSED AIR REQUIREMENTS

MODEL 180-6—3/4" Pump Piston
MODEL 180-7—7/8" Pump Piston
MODEL 180-8—1.0" Pump Piston

MODEL 1800-6—3/4" Pump Piston
MODEL 1800-7—7/8" Pump Piston
MODEL 1800-8—1.0" Pump Piston



The performance curves show maximum flow rates at given lifts. Lower flow rates are obtained, at any lift, by reducing the air pressure to the pump motor.

FIGURE 4. PIEZOMETER BENNETT SAMPLE PUMP SPECIFICATIONS

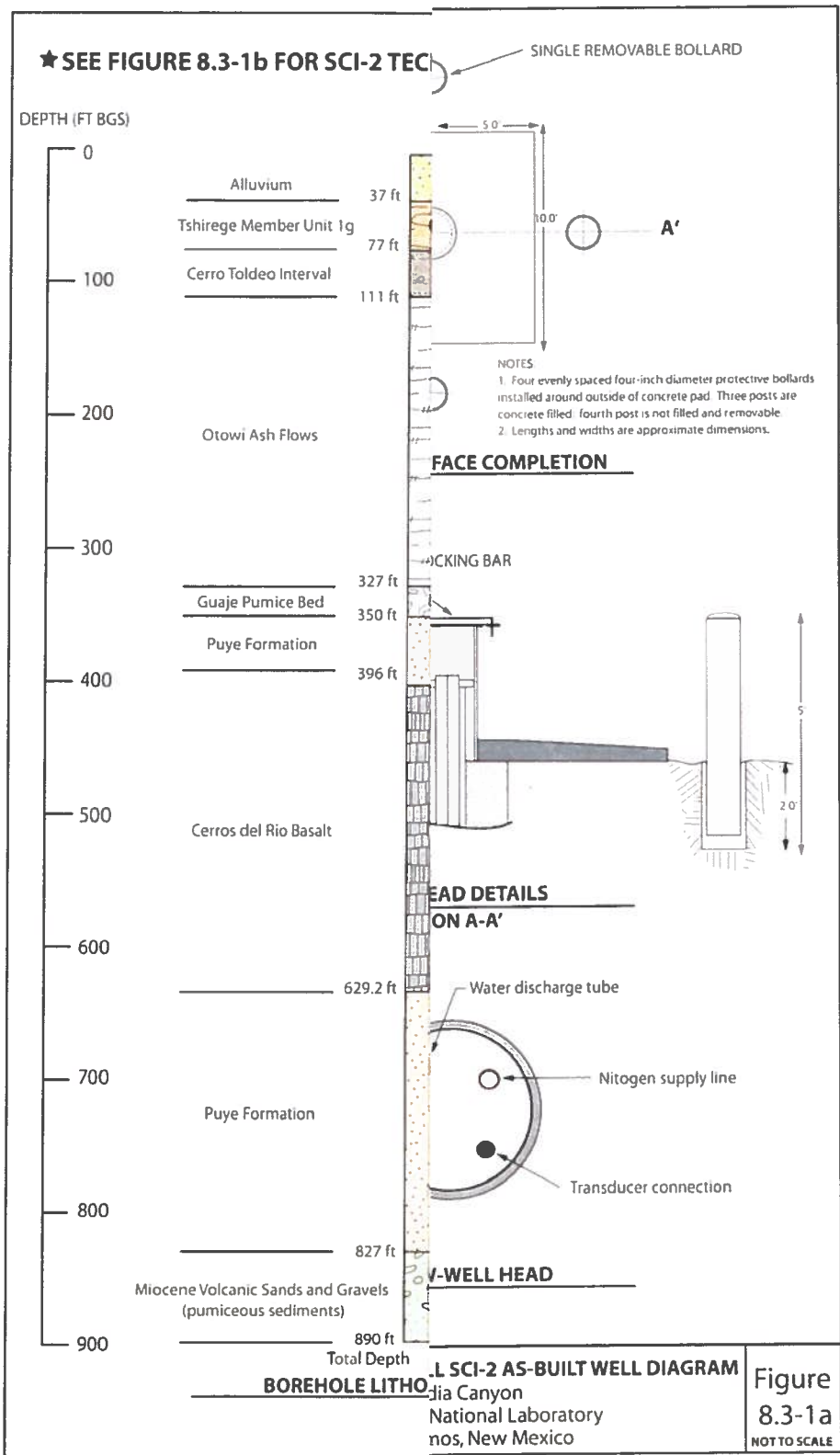


Figure 8.3-1a As-built schematic for intermedia