District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Duplicate
Incident Closure
Approved 3/30/2020
Accepted for Record

Release Notification

Responsible Party

Responsible Party **BP Production Co.**	OGRID **778** Final Report
Contact Name **Steve Moskal**	Contact Telephone **(505) 330-9179**
Contact email **Steven.Moskal@bpx.com**	Incident # *(assigned by OCD)* **NCS2004449525**
Contact mailing address **1199 Main Ave., Suite 101, Durango, CO 81301**	

Location of Release Source

Latitude **36.72083** Longitude **-107.79617**
(NAD 83 in decimal degrees to 5 decimal places)

Site Name **W D HEATH A 005**	Site Type **Natural Gas Well**
Date Release Discovered **11/20/2019**	API# *(if applicable)* **30-045-08217**

Unit Letter	Section	Township	Range	County
P	**17**	**29N**	**09W**	**San Juan**

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) **Unknown**	Volume Recovered (bbls) **None**
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls) **Unknown**	Volume Recovered (bbls) **None**
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release **Undetermined. Possible integrity issue with existing below-grade tank (BGT) bottom.**

Benzene, BTEX, & chloride all below below-grade tank (BGT) permit closure standards. TPH exceeded permit closure standard, but meets 19.15.29 NMAC allowable concentration. Supporting documentation attached.

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Not required.

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Adhering to 19.15.17 NMAC closure standards according to initial final draft with effective date, June 16, 2008.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	99 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

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District RP	
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Steve Moskal Steven Moskal 2020.03.03 12:53:14 -07'00' Title: Environmental Coordinator

Signature: _____ Date: March 3, 2020

email: Steve.Moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Steve Moskal Steven Moskal 2020.03.03 12:50:36 -07'00' Title: Environmental Coordinator

Signature: _____ Date: March 3, 2020

email: Steve.Moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Re: BP Pit Closure Notification - W D Heath A 005

From: Steven Moskal
Sent: Thursday, November 14, 2019 @ 12:52 PM
To: Cory Smith, EMNRD
Cc: aadeloye@blm.gov, Nelson Velez, Jeffrey Blagg, Erin Dunman, Joseph Schnitzler, Patti Champbell

This work is scheduled for Monday, 11/18, at 10:00 AM.

Steve Moskal - Environmental Coordinator
BP San Juan
(505) 330-9179 | steven.moskal@bpx.com

Sent from my mobile device

From: Patti Campbell
Sent: Wednesday, November 13, 2019 10:03:35 AM
To: Cory Smith, EMNRD
Cc: Steven Moskal; aadeloye@blm.gov; Nelson Velez; Jeff Blagg; Erin Dunman; Joseph Schnitzler
Subject: BP Pit Closure Notification - W D Heath A 005

SENT VIA E-MAIL TO: CORY.SMITH@STATE.NM.US; VANESSA.FIELDS@STATE.NM.US

November 13, 2019

New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: Notice of Proposed Below-Grade Tank (BGT) Closure

W D Heath A 005
API 30-045-08217
(P) Section 17 – T29N – R09W
San Juan County, New Mexico

Dear Mr. Cory Smith,

In regards to the captioned subject and requirements of the NMOCD pit rule, this letter is notification that BP is planning to close a 95bbl BGT that will no longer be operational at this well site. We anticipate this work to start on or around November 18, 2019.

Should you have any questions, please feel free to contact BP.

Sincerely,

Patti Campbell
Regulatory Analyst
BP America Production Company | BPX Energy Inc.
(970) 712-5997 | patti.campbell@bpx.com

bp

BP America Production Company
1199 Main Ave., Suite 101
Durango, CO 81303

November 13, 2019

Bureau of Land Management
Emmanuel Abiodun Adeloye
6251 College, Suite A
Farmington, NM 87402

VIA EMAIL

Re: Notification of plans to close/remove a below grade tank
Well Name: W D HEATH A 005
API# - 3004508217

Dear Mr. Adeloye,

As part of the NM "Pit Rule": 19.15.17.13 Closure Requirements, Paragraph J. BP America Production Company (BP) is required to notify the surface owner of BP's plans to close/remove a below grade tank. BP wishes to inform you of our plans to close/remove the below grade tank on its well pad located on your surface. BP plans to commence this work on or about November 18, 2019. Barring any unforeseen issues, the work should be completed within 10 working days.

As a point of clarification, BP will be closing the below grade tank and either operating without one or replacing it with an above ground tank, the well site will continue to operate.

If witnessing of the tank removal is required, please contact Steve Moskal on (505)-330-9179 or Erin Dunman on (281) 810-2578 for a specific time.

Sincerely,

Patti Campbell

Patti Campbell
BPX – San Juan
Regulatory Analyst

CLIENT: BP

BLAGG ENGINEERING, INC.
P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

API #: 3004508217
TANK ID (if applicble): B

FIELD REPORT:

(circle one): BGT CONFIRMATION / RELEASE INVESTIGATION / OTHER:

PAGE #: 1 of 1

SITE INFORMATION:

SITE NAME: W.D. HEATH A # 5

QUAD/UNIT: P SEC: 17 TWP: 29N RNG: 9W PM: NM CNTY: SJ ST: NM

1/4 -1/4/FOOTAGE: 990'S / 990'E SE/SE LEASE TYPE: FEDERAL / STATE / FEE / INDIAN

LEASE #: SF076337 PROD. FORMATION: PC CONTRACTOR: KELLEY O.F.S. BPX - D. BULLER

DATE STARTED: 11/18/19
DATE FINISHED:
ENVIRONMENTAL SPECIALIST(S): NJV

REFERENCE POINT:

WELL HEAD (W.H.) GPS COORD.: 36.72058 X 107.79598 GL ELEV.: 5,653'

1) 95 BGT (DW/DB) - B	GPS COORD.: 36.72083 X 107.79617	DISTANCE/BEARING FROM W.H.: 105.5', N26W
2)	GPS COORD.:	DISTANCE/BEARING FROM W.H.:
3)	GPS COORD.:	DISTANCE/BEARING FROM W.H.:
4)	GPS COORD.:	DISTANCE/BEARING FROM W.H.:

SAMPLING DATA:

CHAIN OF CUSTODY RECORD(S) # OR LAB USED: HALL

	SAMPLE ID:	SAMPLE DATE:	SAMPLE TIME:	LAB ANALYSIS:	OVM READING (ppm)
1)	5PC - TB @ 5' (95)-B	11/18/19	1200	8015B/8021B/300.0 (Cl)	0.0
2)	GRAB @ 5' (95)-B	11/18/19	1202	8015B/8021B/300.0 (Cl)	0.0
3)					
4)					
5)					

SOIL DESCRIPTION:

SOIL TYPE: SAND / SILTY SAND / SILT / SILTY CLAY / CLAY / GRAVEL / OTHER

SOIL COLOR: DARK YELLOWISH ORANGE

COHESION (ALL OTHERS): NON COHESIVE / SLIGHTLY COHESIVE / COHESIVE / HIGHLY COHESIVE

CONSISTENCY (NON COHESIVE SOILS): LOOSE / FIRM / DENSE / VERY DENSE

MOISTURE: DRY / SLIGHTLY MOIST / MOIST / WET / SATURATED / SUPER SATURATED

SAMPLE TYPE: GRAB / COMPOSITE - # OF PTS. 5

DISCOLORATION/STAINING OBSERVED: YES / NO EXPLANATION -

PLASTICITY (CLAYS): NON PLASTIC / SLIGHTLY PLASTIC / COHESIVE / MEDIUM PLASTIC / HIGHLY PLASTIC

DENSITY (COHESIVE CLAYS & SILTS): SOFT / FIRM / STIFF / VERY STIFF / HARD

HC ODOR DETECTED: YES / NO EXPLANATION -

ANY AREAS DISPLAYING WETNESS: YES / NO EXPLANATION - ORIGIN UNDETERMINED

SITE OBSERVATIONS:

LOST INTEGRITY OF EQUIPMENT: YES / NO EXPLANATION -

APPARENT EVIDENCE OF A RELEASE OBSERVED AND/OR OCCURRED : YES / NO EXPLANATION:

EQUIPMENT SET OVER RECLAIMED AREA: YES / NO EXPLANATION -

OTHER: NMOCD OR BLM REPS. NOT PRESENT TO WITNESS CONFIRMATION SAMPLING. REPLACED SW/DB BGT WITH DW/DB IN FEBRUARY 2018.

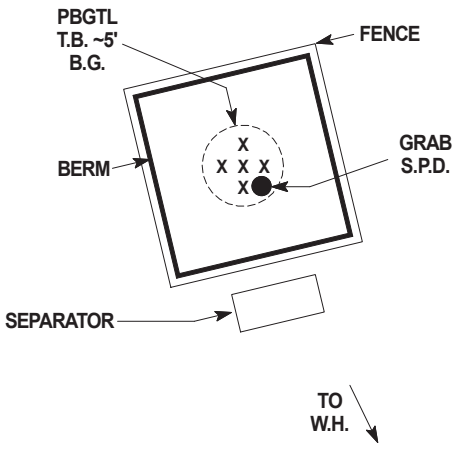
EXCAVATION DIMENSION ESTIMATION: NA ft. X NA ft. X NA ft. EXCAVATION ESTIMATION (Cubic Yards) : NA

DEPTH TO GROUNDWATER: 50'<X<100' NEAREST WATER SOURCE: >1,000' NEAREST SURFACE WATER: 300'<X<1,000' NMOCD TPH CLOSURE STD: 2,500 ppm

SITE SKETCH

BGT Located : off / on site

PLOT PLAN circle: attached



OVM CALIB. READ. = 100.2 ppm RF =1.00
OVM CALIB. GAS = 100 ppm
TIME: 9:55 am/pm DATE: 11/18/19

MISCELL. NOTES

PO:
AFE #:
SIO #: 190040007276
GL #: 745277
Permit date(s): 06/14/10
OCD Appr. date(s): 01/22/18

Tank ID	OVM = Organic Vapor Meter ppm = parts per million
B	BGT Sidewalls Visible: Y / N
	BGT Sidewalls Visible: Y / N
	BGT Sidewalls Visible: Y / N

Magnetic declination: 10° E

NOTES: BGT = BELOW-GRADE TANK; E.D. = EXCAVATION DEPRESSION; B.G. = BELOW GRADE; B = BELOW; T.H. = TEST HOLE; ~ = APPROX.; W.H. = WELL HEAD; T.B. = TANK BOTTOM; PBGTL = PREVIOUS BELOW-GRADE TANK LOCATION; SPD = SAMPLE POINT DESIGNATION; R.W. = RETAINING WALL; NA - NOT APPLICABLE OR NOT AVAILABLE; SW - SINGLE WALL; DW - DOUBLE WALL; SB - SINGLE BOTTOM; DB - DOUBLE BOTTOM.

NOTES: GOOGLE EARTH IMAGERY DATE: 10/5/2016. ONSITE: 11/18/19

envirotech
Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:15

5PC - TB @ 5' (95)
P911080-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*102 %*		*50-150*	*1947008*	*11/18/19*	*11/18/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	**51.2**	25.0	mg/kg	1	1946050	11/18/19	11/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	**62.0**	50.0	mg/kg	1	1946050	11/18/19	11/18/19	EPA 8015D	
Surrogate: n-Nonane		*90.4 %*		*50-200*	*1946050*	*11/18/19*	*11/18/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*85.2 %*		*50-150*	*1947008*	*11/18/19*	*11/18/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**105**	20.0	mg/kg	1	1947002	11/18/19	11/18/19	EPA 300.0/9056A	

envirotech
Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:14

Grab @ 5' (95)
P911079-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*98.7 %*		*50-150*	*1947008*	*11/18/19*	*11/18/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1946050	11/18/19	11/18/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1946050	11/18/19	11/18/19	EPA 8015D	
Surrogate: n-Nonane		*100 %*		*50-200*	*1946050*	*11/18/19*	*11/18/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1947008	11/18/19	11/18/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*84.9 %*		*50-150*	*1947008*	*11/18/19*	*11/18/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	**21.3**	20.0	mg/kg	1	1947002	11/18/19	11/18/19	EPA 300.0/9056A	

Project Information | Chain of Custody | Page 1 of 1

Project Information		Report Attention		Lab Use Only		TAT		EPA Program		
Client: BPX Energy Inc.		Report due by: 11/19/2019		Lab WO# P911080	Job Number 03143-0424	1D X	3D	RCRA	CWA	SDW
Project: W D HEATH A 005		Attention: Steve Moskal								
Project Manager: Steve Moskal - BPX Engery Inc.		Address:		Analysis and Method					State	
Address: 1199 Main Ave., Suite 101		City, State, Zip							NM X	CO UT
City, State, Zip Durango, CO 81301		Phone: N. Velez (505) 320-3489; S. Moskal (505) 330-9179								
Phone: (505) 330-9179 - S. Moskal		Email: See "additional instructions" below								
Email: See "additional instructions" below										

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1	Remarks
1200	11/18/19	SOIL	1-4 oz.	5PC - TB @ 5' (95)		X	X	X			X		5 point composite

Additional Instructions: Send emails to: jeffcblagg@aol.com, blagg_njv@yahoo.com, StevenMoskal@bpx.com, & Don.Buller@bpx.com. Use PO for: 2nd half 2019 BGT Compliance.

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: NELSON VELEZ - BLAGG ENGR.

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	11/18/19	1340	Raia Lopez	11/18/19	13:40
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only
Received on ice: (Y) / N
T1 T2 T3
AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech Analytical Laboratory
5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879

Chain of Custody

Project Information

Client: BPX Energy Inc.
Project: W D HEATH A 005
Project Manager: Steve Moskal - BPX Engery Inc.
Address: 1199 Main Ave., Suite 101
City, State, Zip Durango, CO 81301
Phone: (505) 330-9179 - S. Moskal
Email: See "additional instructions" below

Report Attention

Report due by: 11/19/2019
Attention: Steve Moskal
Address:
City, State, Zip
Phone: N. Velez (505) 320-3489; S. Moskal (505) 330-9179
Email: See "additional instructions" below

Lab Use Only

Lab WO# P911079
Job Number 03143-0424

TAT: 1D X; 3D

EPA Program: RCRA; CWA; SDW

State: NM X; CO; UT

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1	Remarks
1200	11/18/19	SOIL	1-4 oz.	Grab @ 5' (95)		X	X	X			X		5 point composite

Additional Instructions: Send emails to: jeffcblagg@aol.com, blagg_njv@yahoo.com, StevenMoskal@bpx.com, & Don.Buller@bpx.com. Use PO for: 2nd half 2019 BGT Compliance.

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: NELSON VELEZ - BLAGG ENGR.

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	11/18/19	1340		11/18/19	13:40
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only
Received on ice: Y / N
T1 T2 T3
AVG Temp °C

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____
Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboraotry is limited to the amount paid for on the report.

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Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879

SITING AND HYDRO-GEOLOGICAL REPORT W D HEATH A 005 TANK B

SITING CRITERIA 19.15.17.10 NMAC

Depth to groundwater at the site is estimated between 50-100 feet (**ft.**) below ground surface (**bgs**). This estimation is based on data from Stone and others (1983) and depth to water data obtained from the New Mexico State Engineer's Office (**NMOSE**). Local topography and proximity to adjacent water features were also reviewed.

The below-grade tank (**BGT**) meets all siting criteria within 19.15.29 paragraph 4 of subsection C of Section 12 NMAC. The attached Figures 1 through 8 demonstrates the below-grade tank (**BGT**) is not within; 1) 300 feet of any continuously flowing watercourse or any other significant watercourse; 2) 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark); 3) 300 feet from an occupied permanent residence, school, hospital, institution or church; 4) 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1,000 feet of any fresh water well or spring; 5) incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves; 6) 300 feet of a wetland; 7) area overlying a subsurface mine; 8) an unstable area; or 9) a 100-year floodplain.

LOCAL GEOLOGY AND HYDROLOGY

This particular site is located at the west end of Manzanares Mesa near the main channel of Largo Canyon. Regional topography of Largo Canyon is composed of mesas dissected by deep, narrow canyons and arroyos. The more resistant cliff-forming sandstones of the San Jose Formation cap the interbedded siltstones, shales and sandstones of the Nacimiento Formation. Accumulations of talus and eroded sands at the base of canyon walls form steep to gentle slopes that transition into flat-bottomed arroyos within the canyons. Deposits of Quaternary alluvial and eolian sands occur prominently near the surface of Largo Canyon, especially near streams and washes.

Groundwater at the site is estimated between 50-100 ft. bgs. This estimation is based on Google Earth's aerial photography (Imagery date: 10/5/2016) elevation difference between the site's ground level (5,653 ft.) and water well SJ03864 POD3 (attached) water elevation of 5,554 ft. SJ03864 POD3 is located at Global Positioning System (GPS) coordinates 36.716417,-107.804806, or approximately 0.57 miles S57.5W from the BGT (see Figure 3A).

REGIONAL GEOLOGY AND HYDROLOGY

The San Juan Basin is situated in the Navajo section of the Colorado Plateau and is characterized by broad open valleys, mesas, buttes and hogbacks. Away from major valleys and canyons topographic relief is generally low. Native vegetation is sparse and shrubby. Drainage is mainly by the San Juan River, the only permanent stream in the Navajo Section of the Colorado Plateau. The San Juan River is a tributary of the Colorado River. Major tributaries include the Animas, Chaco and La Plata Rivers. Flow of the San Juan River across the basin is regulated by the Navajo Dam, located about 30 miles northeast of Farmington, New Mexico. The climate is arid to semiarid with an average annual precipitation of 8 to 10 inches. Soils within the basin consist of weathered parent rock derived from predominantly physical means mostly from eolian depositional system with fluvial having a lesser impact.

Cretaceous and Tertiary sandstones, as well as Quaternary Alluvial deposits, serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). The predominant geologic formation this close to Largo Wash is Quaternary alluvium. Alluvial valley fill consists of gravel, sand, silt and clay (Stone et al., 1983). Numerous shallow wells produce water from valley fill for stock and domestic uses along the river and transmissivities are generally high. Most recharge to the alluvium results from infiltration of stormflow, but small quantities are also contributed from bedrock sources.

REFERENCES

Circular 154—Guidebook to coal geology of northwest New Mexico By E. C. Beaumont, J. W. Shomaker, W. J. Stone, and others, 1976

Stone, et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico, Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p

19.15.29 NMAC
Section 12, Subsection C, Paragraph 4

(4) If a release occurs within the following areas, the responsible party must treat the release as if it occurred less than 50 feet to ground water in Table I of 19.15.29.12 NMAC:

(a) within

(i) 300 feet of any continuously flowing watercourse or any other significant watercourse, or

(ii) 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark);

(b) within 300 feet from an occupied permanent residence, school, hospital, institution or church;

(c) within

(i) 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or

(ii) 1000 feet of any fresh water well or spring;

(d) within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves;

(e) within 300 feet of a wetland;

(f) within the area overlying a subsurface mine;

(g) within an unstable area; or

(h) within a 100-year floodplain.

(5) The division has 60 days from receipt of the proposed remediation plan to review and approve, approve with conditions or deny the remediation plan. If 60 days have lapsed without response from the division, then the plan is deemed denied. If the plan is approved with conditions or affirmatively denied, the division shall provide a written summary of deficiencies on which the decision is based. If the responsible party disagrees with any conditions of approval or denial of the plan, it shall consult with the division or file an application for hearing pursuant to 19.15.4 NMAC within 30 days of the denial or issuance of the conditions.

D. Closure requirements. The responsible party must take the following action for any major or minor release containing liquids.

(1) The responsible party must test the remediated areas for contamination with representative five-point composite samples from the walls and base, and individual grab samples from any wet or discolored areas. The samples must be analyzed for the constituents listed in Table I of 19.15.29.12 NMAC or constituents from other applicable remediation standards.

(a) The responsible party must verbally notify the appropriate division district office two business days prior to conducting final sampling. If the division district office does not respond to the notice within the two business days, the responsible party may proceed with final sampling. The responsible party may request a variance from this requirement upon a showing of good cause as determined by the division.

(b) The responsible party may submit a composite and grab sample plan for the division's review and approval separately or with the remediation plan.

(c) Alternately, without division approval, the responsible party may elect to perform a composite and grab sample plan of the remediated area where each composite sample is not representative of more than 200 square feet.

(2) If all composite and grab sample concentrations are less than or equal to the parameters listed in Table I of 19.15.29.12 NMAC or any conditions of approval, then the responsible party may proceed to backfill any excavated areas.

E. Closure reporting. The responsible party must take the following action for any major or minor release containing liquids.

(1) The responsible party must submit to the division a closure report on form C-141, including required attachments, to document all closure activities including sampling results and the details on any backfilling, capping or covering, where applicable. The responsible party must certify that all information in the closure report and attachments is correct and that the responsible party has complied with all applicable closure requirements and conditions specified in division rules or directives. The

responsible party must submit closure report along with form C-141 to the division within 90 days of the remediation plan approval. The responsible party may apply for additional time to submit the final closure report upon a showing of good cause as determined by the division. The final report must include:

(a) a scaled site and sampling diagram;
(b) photographs of the remediated site prior to backfill;
(c) laboratory analyses of final sampling; and
(d) a description of all remedial activities.

(2) The division district office has 60 days to review and approve or deny the closure report. If 60 days have lapsed without response from the division, then the report is deemed denied. If the report is affirmatively denied, the division shall provide a written summary of deficiencies on which the decision is based. If the responsible party disagrees with denial of the closure report, it may consult with the division or file an application for hearing pursuant to 19.15.4 NMAC within 30 days of the denial.

Table I
Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride***	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

*Or other test methods approved by the division.
**Numerical limits or natural background level, whichever is greater.
***This applies to releases of produced water or other fluids, which may contain chloride.
[19.15.29.12 NMAC - N, 8/14/2018]

New Mexico Office of the State Engineer

Wells with Well Log Information

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number	POD Code	POD Subbasin	County	Source	q 64	q 16	q 4	Sec	Twn	Rng	X	Y	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
SJ 02883		SJM2	SJ	Shallow	3	3	2	16	29N	09W	251496	4068078*	07/20/1998	07/31/1998	08/10/1998	123	87	KENNETH MCDONALD	725
SJ 03185		SJM2	SJ	Shallow	4	4	3	16	29N	09W	251290	4067283*	05/28/2002	06/01/2002	06/05/2002	220	100		1508
SJ 03864 POD1		SJM2	SJ	Shallow	1	2	1	20	29N	09W	249488	4067082	03/03/2009	03/03/2009	03/25/2009	19	15	CAIN, MATTHEW	1210
SJ 03864 POD2		SJM2	SJ	Shallow	1	2	1	20	29N	09W	249517	4067081	03/03/2009	03/03/2009	03/25/2009	19	14	CAIN, MATTHEW	1210
SJ 03864 POD3		SJM2	SJ	Shallow	1	2	1	20	29N	09W	249496	4067073	03/03/2009	03/03/2009	03/25/2009	20	7	CAIN, MATTHEW	1210
SJ 04174 POD1		SJ	SJ	Shallow		2	2	20	29N	09W	250245	4066935			11/13/2017	37			1210
SJ 04174 POD2		SJ	SJ	Shallow		2	2	20	29N	09W	250236	4066939			11/13/2017	40			1210
SJ 04174 POD3		SJ	SJ	Shallow		2	2	20	29N	09W	250249	4066951	10/22/2015	10/22/2015	11/13/2015	44	35	BRYAN NYDOSKE	1210
SJ 04174 POD4		SJ	SJ	Shallow		2	2	20	29N	09W	250261	4066932	10/22/2015	10/22/2015	11/13/2015	44	35		1210
SJ 04174 POD5		SJ	SJ	Shallow		2	2	20	29N	09W	250240	4066927	10/23/2015	10/23/2015	11/13/2015	44	35		1210

Record Count: 10

PLSS Search:

Section(s): 16, 17, 19, 20, 21 **Township:** 29N **Range:** 09W

***UTM location was derived from PLSS - see Help**

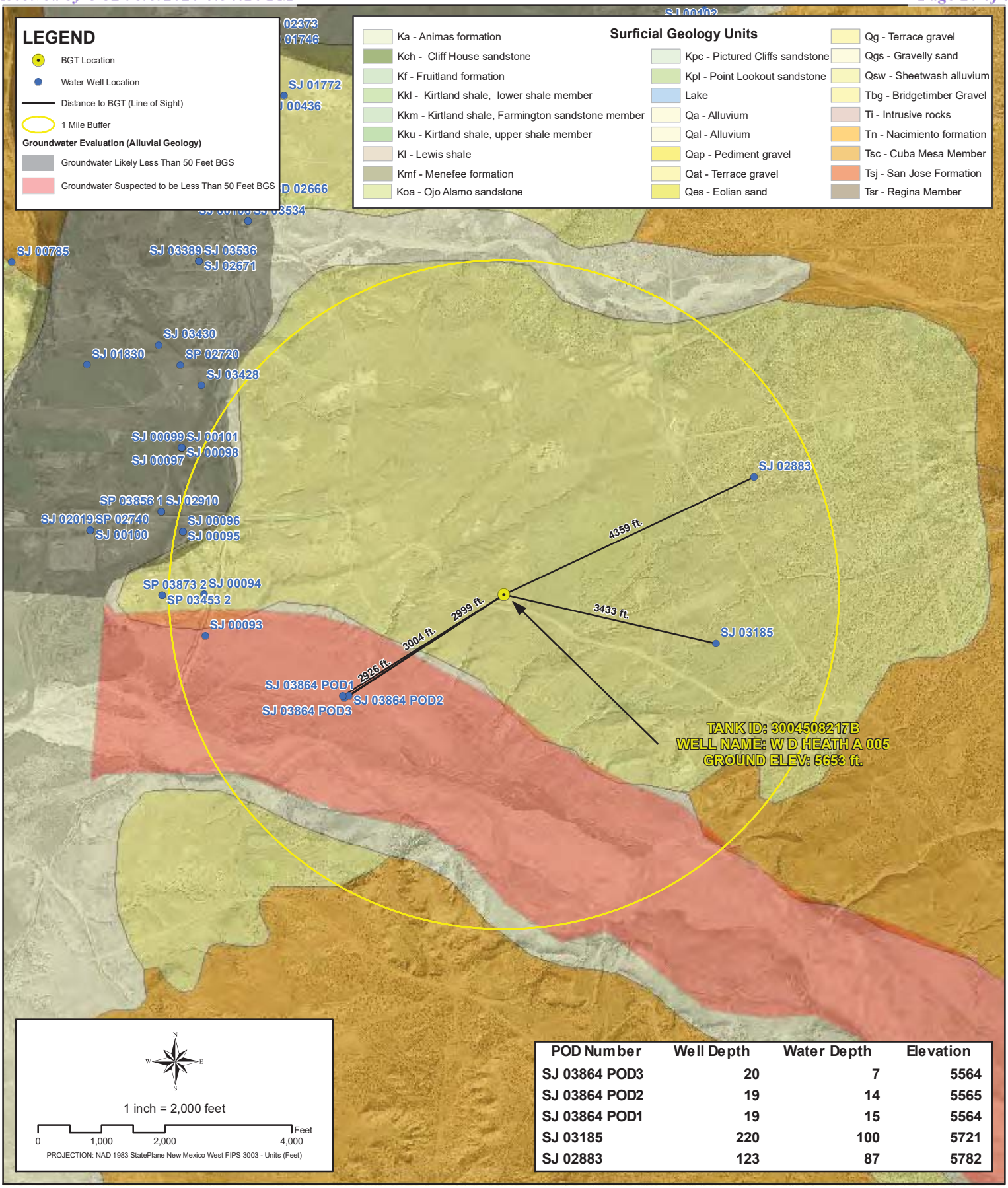
New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	SJ 03864 POD3	1	2	1	20	29N	09W	249496	4067073

Driller License:	1210	**Driller Company:**	CASCADE DRILLING, LP		
Driller Name:	CAIN, MATTHEW				
Drill Start Date:	03/03/2009	**Drill Finish Date:**	03/03/2009	**Plug Date:**	
Log File Date:	03/25/2009	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	2.00	**Depth Well:**	20 feet	**Depth Water:**	7 feet

Water Bearing Stratifications:	Top	Bottom	Description
	7	9	Shale/Mudstone/Siltstone



POD Number	Well Depth	Water Depth	Elevation
SJ 03864 POD3	20	7	5564
SJ 03864 POD2	19	14	5565
SJ 03864 POD1	19	15	5564
SJ 03185	220	100	5721
SJ 02883	123	87	5782

Creation Date: 5/24/2010
Created by: PRW
File Path: X:\BP\LTE_Inspections\PASS\Sector_7\MXDs\3004508217B.mxd
Reviewed by: AGH

GROUNDWATER LESS THAN 50 FT.

WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M. NM23

FIGURE 1

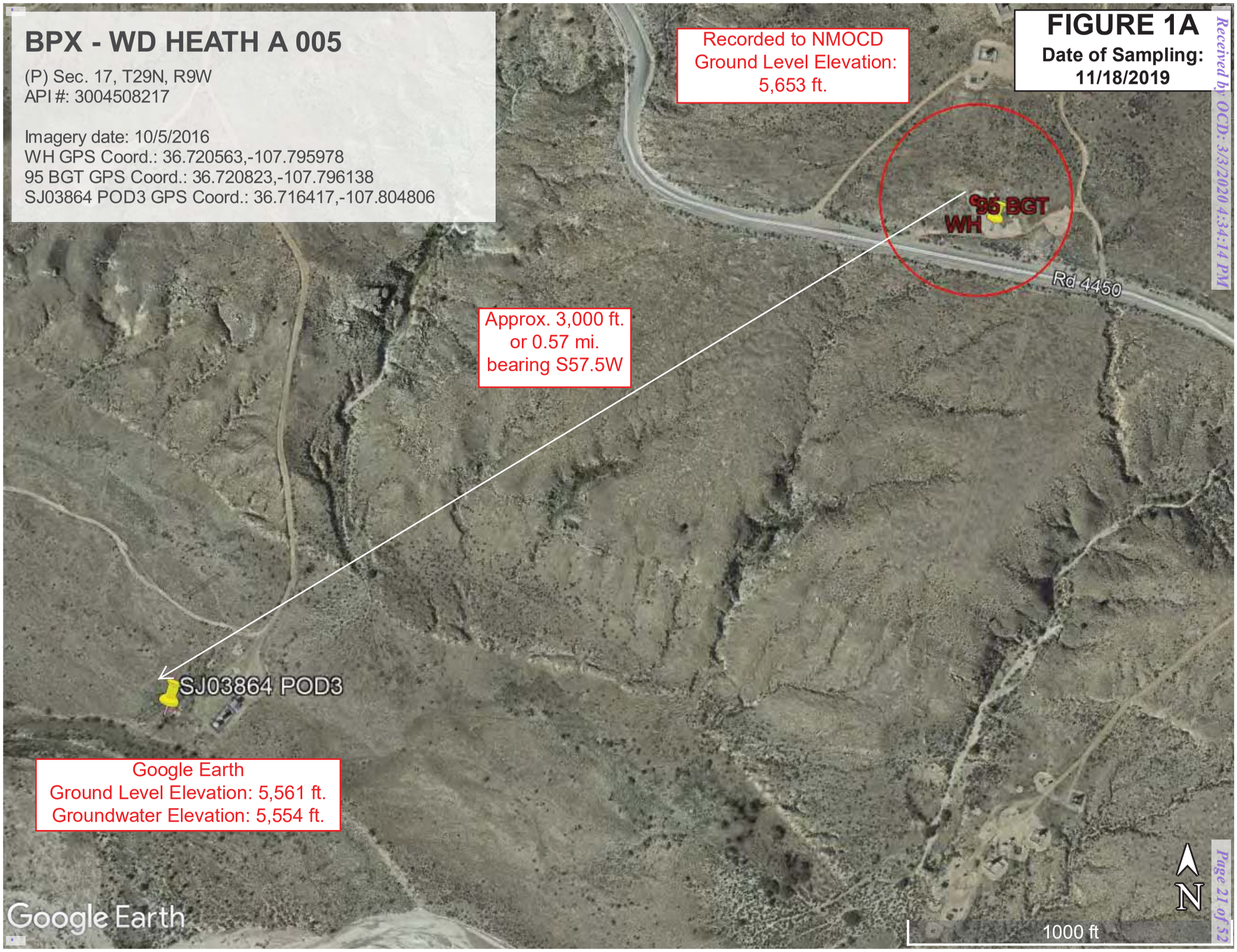
BPX - WD HEATH A 005

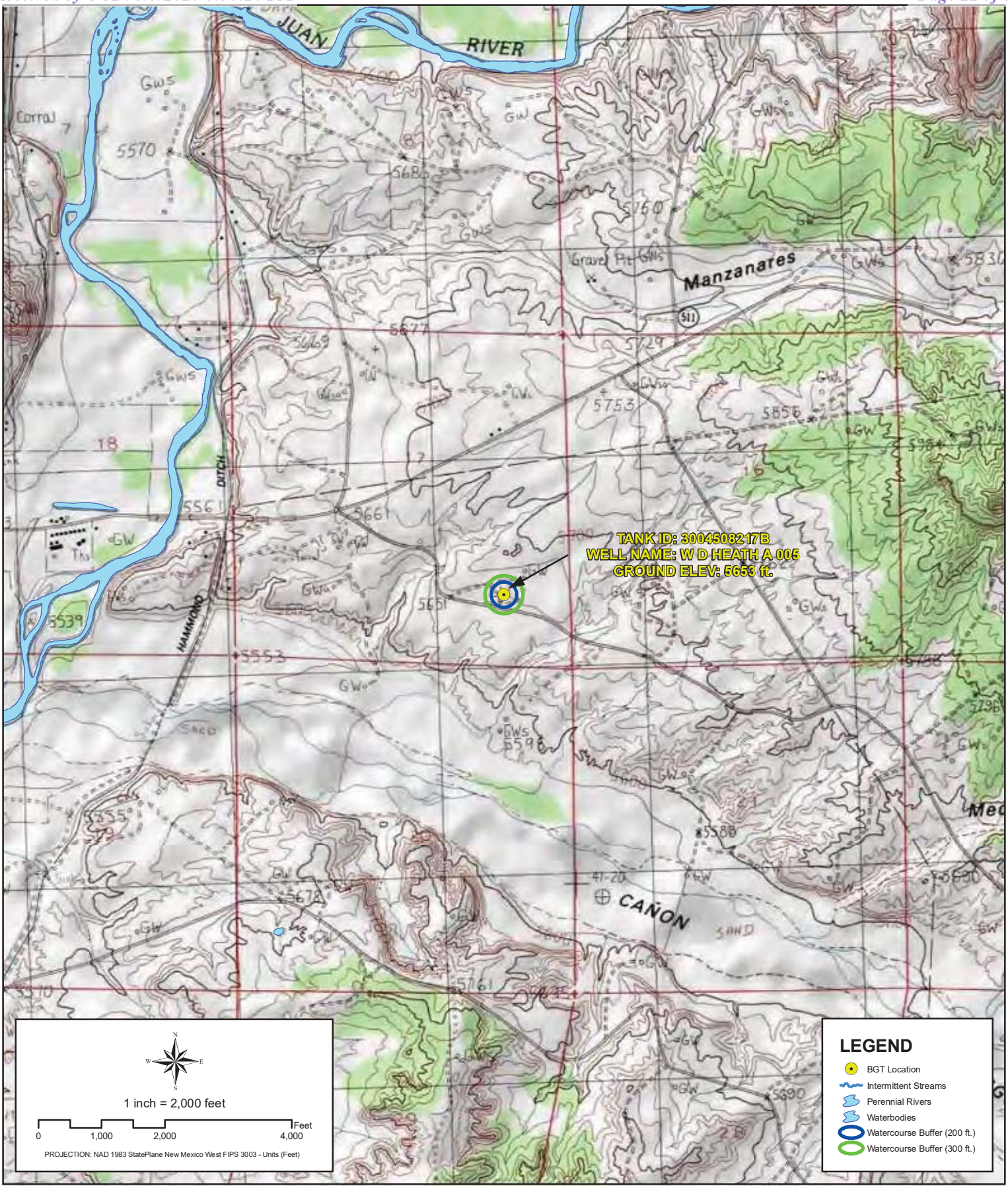
(P) Sec. 17, T29N, R9W
API #: 3004508217

Imagery date: 10/5/2016
WH GPS Coord.: 36.720563,-107.795978
95 BGT GPS Coord.: 36.720823,-107.796138
SJ03864 POD3 GPS Coord.: 36.716417,-107.804806

FIGURE 1A
Date of Sampling: 11/18/2019

Recorded to NMOCD
Ground Level Elevation:
5,653 ft.





Creation Date: 5/24/2010 Created by: PRW

File Path: X:\BP\LTE_Inspections\PASS\Sector_7\MXDs\3004508217B.mxd Reviewed by: AGH

PROXIMITY TO WATERCOURSES

WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M. NM23

FIGURE 2

FIGURE 2A

Date of Sampling: 11/18/2019

W D HEATH A #5

95 bbl BGT
GPS Coordinates:
36.72083,-107.79617
Ground Level Elevation: 5,653

1,000 ft. radius
from 95 bgt center

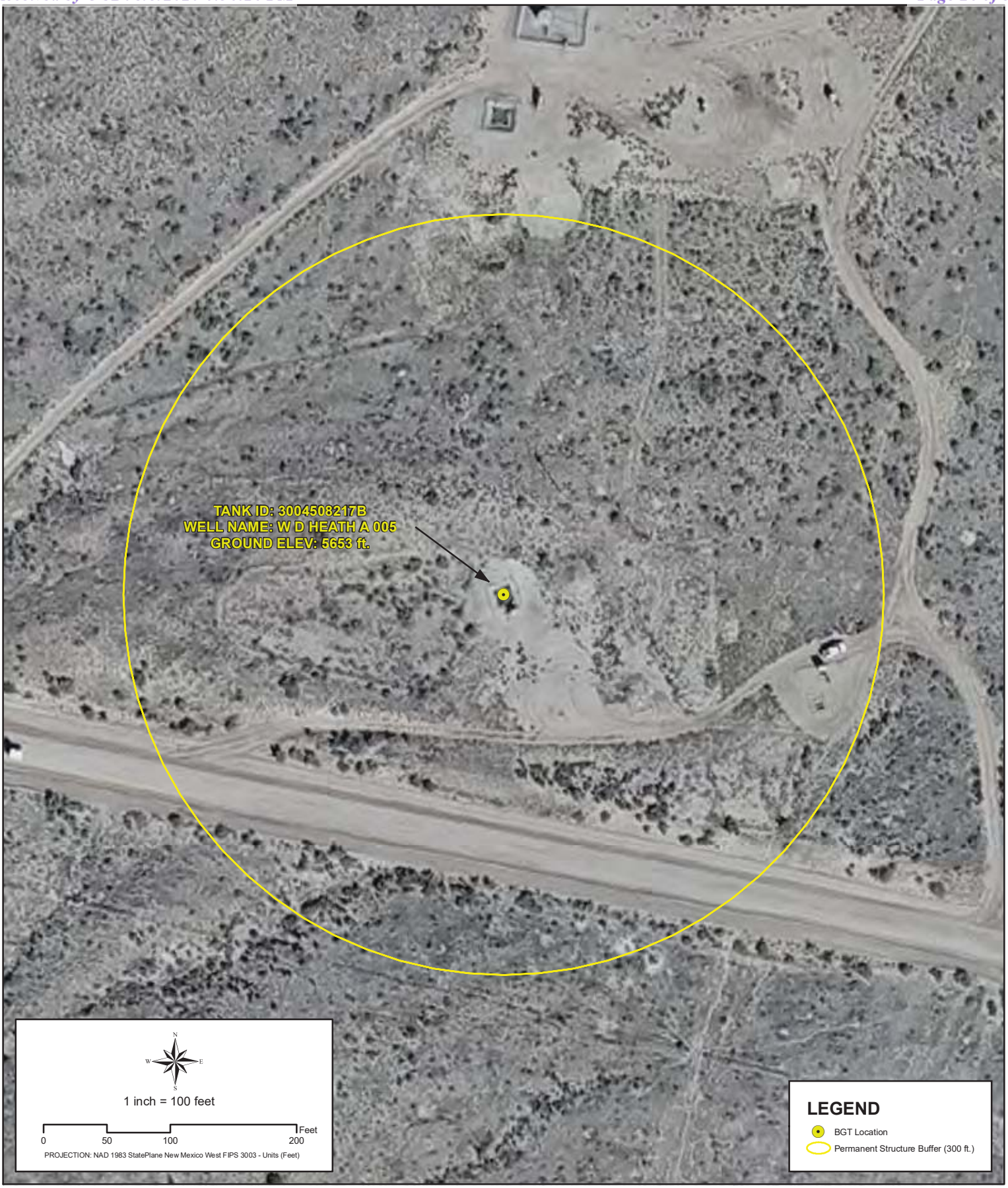
SJ03864 POD3
GPS Coordinates:
36.716417,-107.804806
Ground Level Elevation: 5,561 ft.
Groundwater Elevation: 5,554 ft.

Field Inspected
Surface Gradient
in SSW Direction

Proximity to Watercourses

11° E

SCALE 1:6000
0 100 200 300 400 YARDS
0 1000 FEET
0 100 200 300 400 METERS



Creation Date: 5/24/2010 Created by: PRW

File Path: X:\BP\LTE_Inspections\PASS\Sector_7\MXDs\3004508217B.mxd Reviewed by: AGH

PROXIMITY TO PERMANENT STRUCTURE

WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M. NM23

FIGURE 3

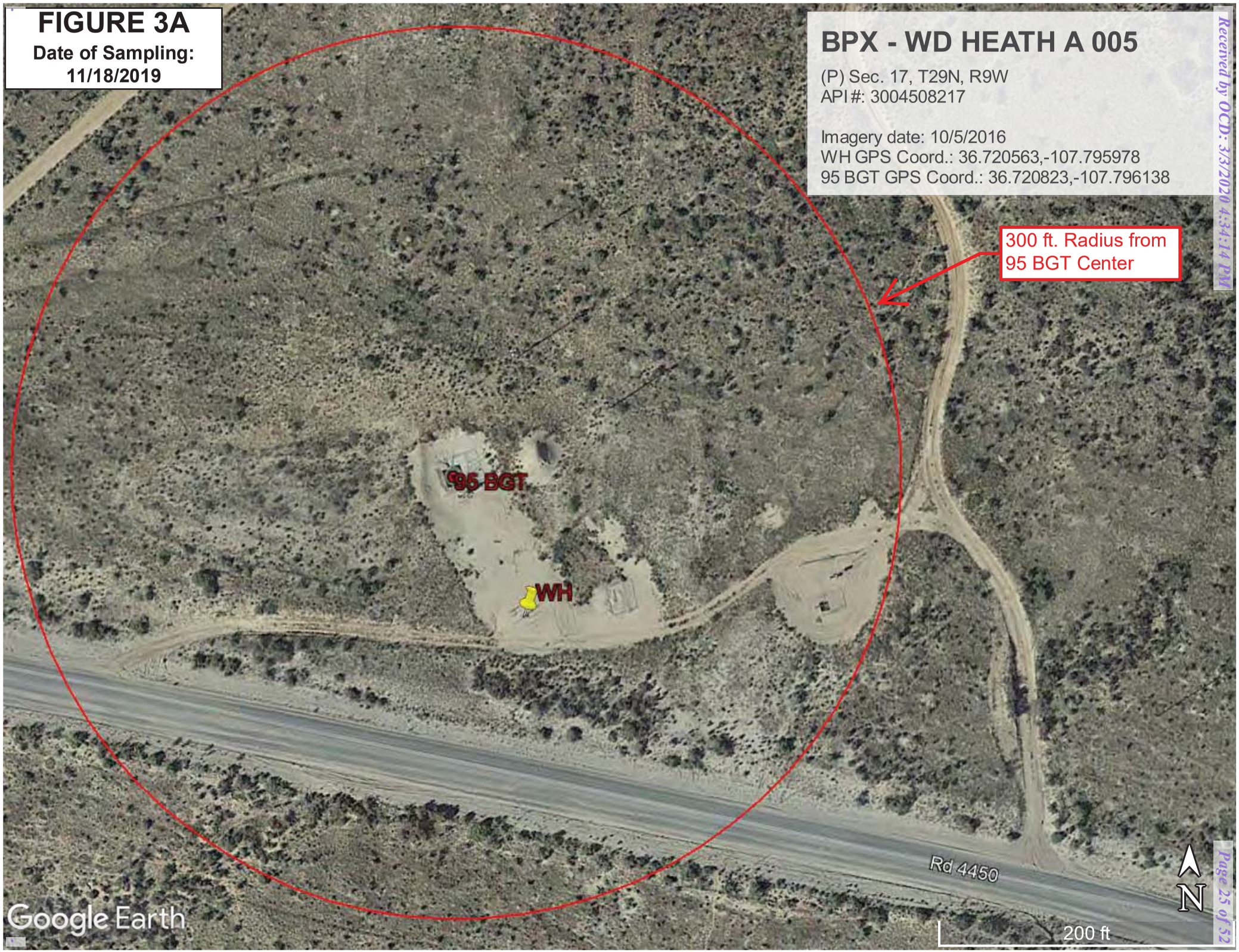
FIGURE 3A

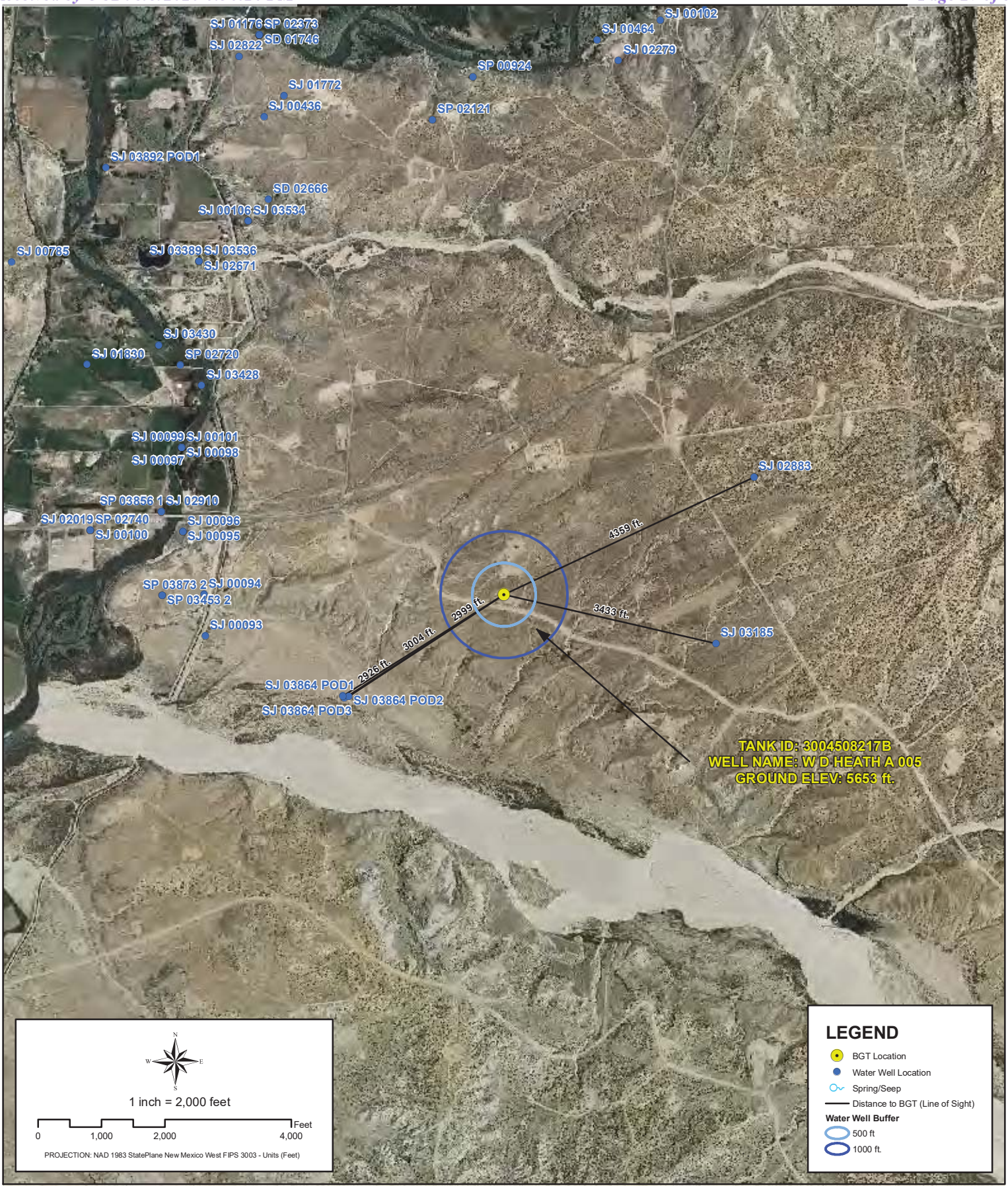
Date of Sampling: 11/18/2019

BPX - WD HEATH A 005

(P) Sec. 17, T29N, R9W
API #: 3004508217

Imagery date: 10/5/2016
WH GPS Coord.: 36.720563,-107.795978
95 BGT GPS Coord.: 36.720823,-107.796138





Creation Date: 5/24/2010
Created by: PRW
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Reviewed by: AGH

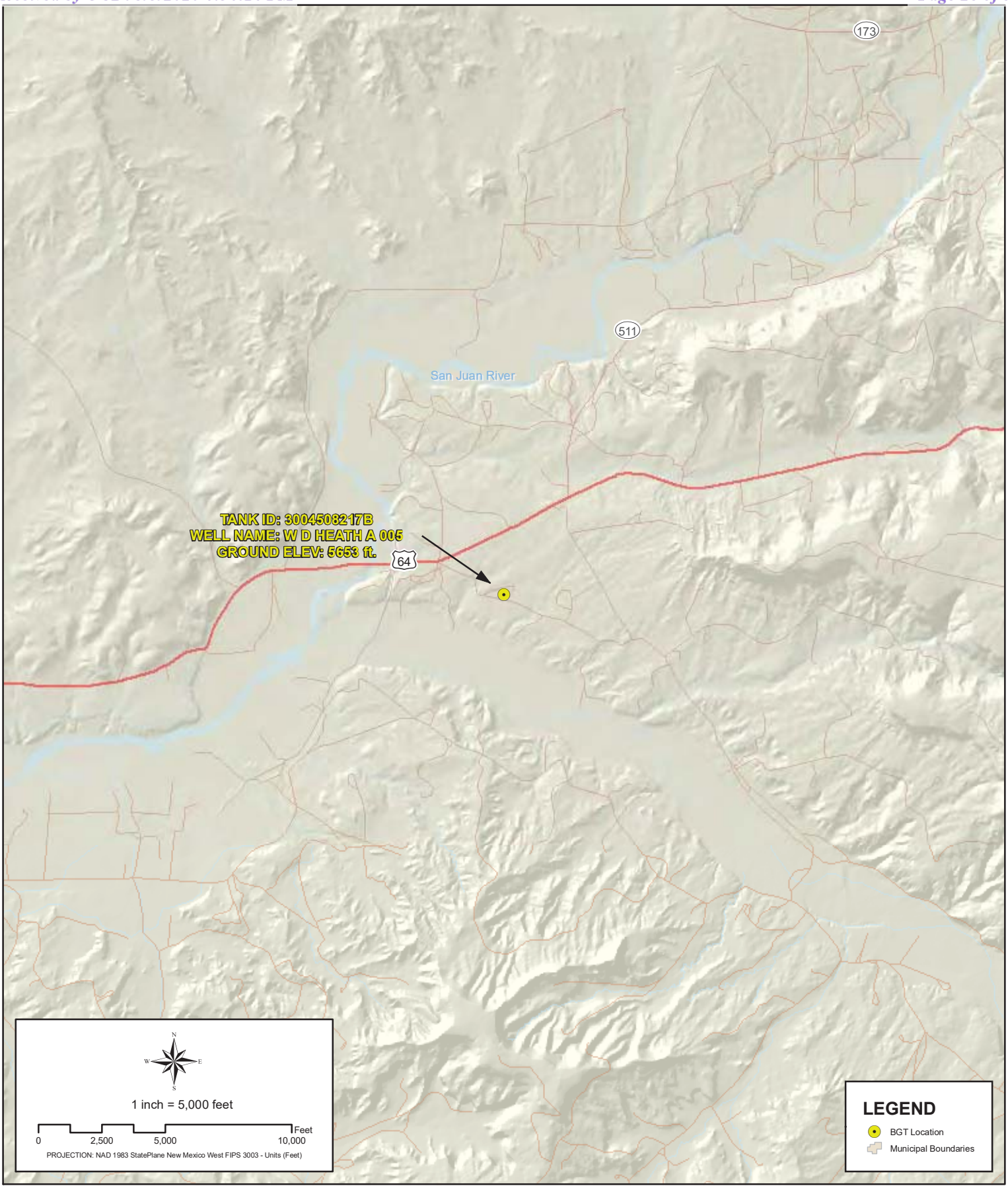
PROXIMITY TO WATER WELLS

WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M. NM23

FIGURE 4



Creation Date: 5/24/2010 Created by: PRW

File Path: X:\BP\LTE_Inspections\PASS\Sector_7\MXDs\3004508217B.mxd Reviewed by: AGH

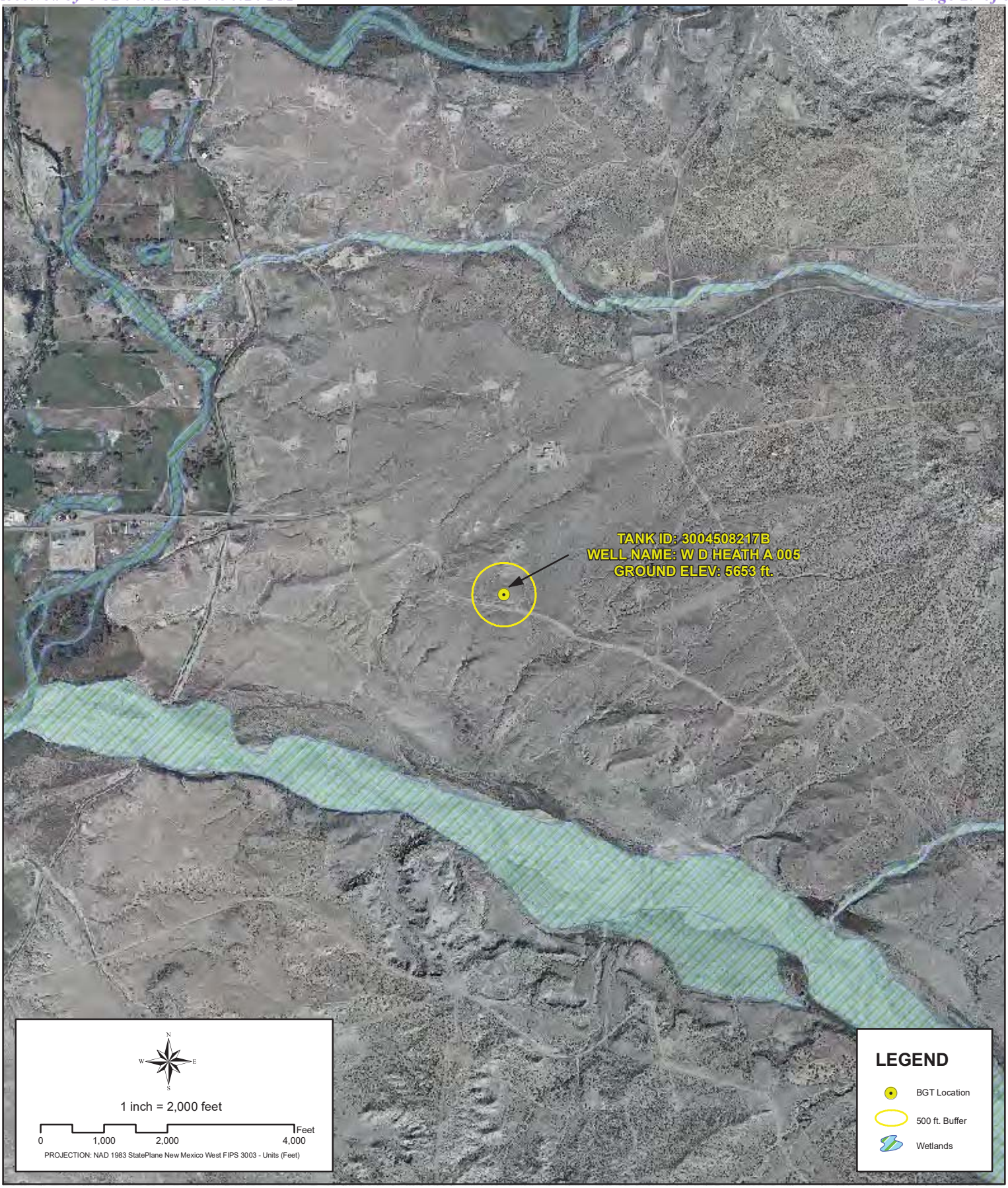
PROXIMITY TO MUNICIPAL BOUNDARY

WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M. NM23

FIGURE 5



Creation Date: 5/24/2010 Created by: PRW

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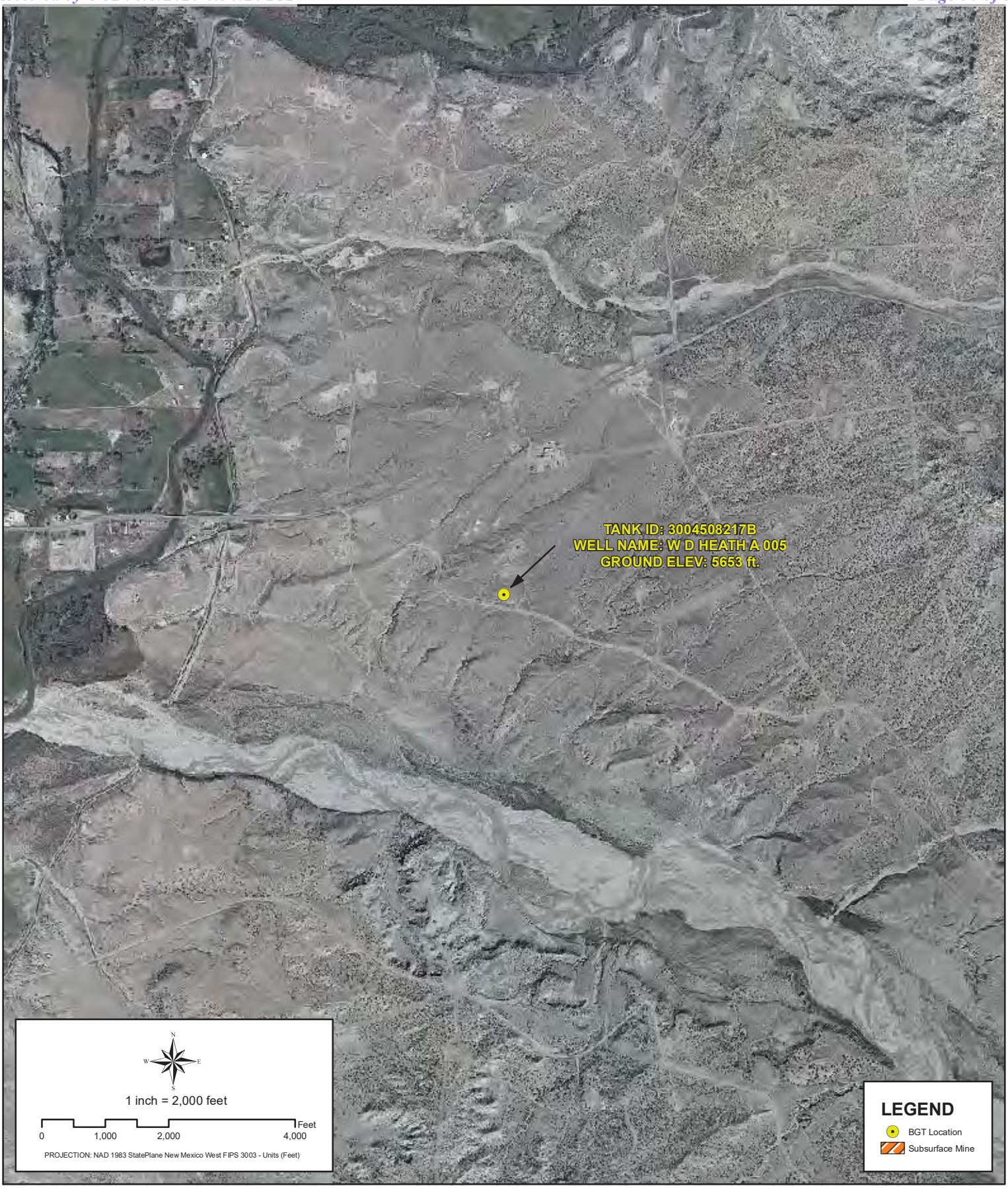
PROXIMITY TO WETLANDS

WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M. NM23

FIGURE 6



Creation Date: 5/24/2010 Created by: EBB

File Path: X:\BP\LTE_Inspections\PASS\Sector_7\MXDs\3004508217B.mxd Reviewed by: AGH

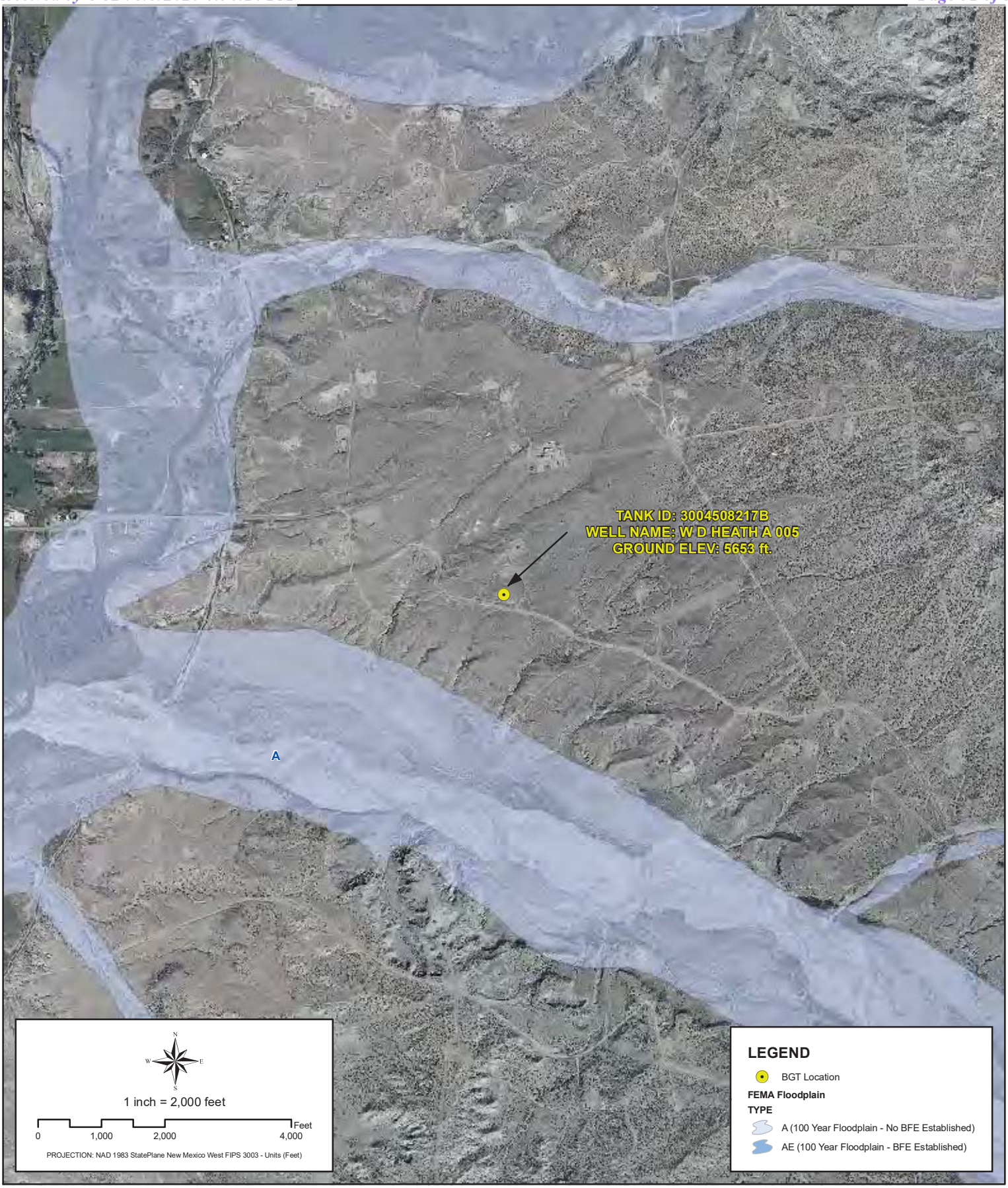
PROXIMITY TO SUBSURFACE MINES

WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M.NM23

FIGURE 7



Creation Date: 5/24/2010 Created by: PRW

File Path: X:\BP\LTE_Inspections\PASS\Sector_7\MXDs\3004508217B.mxd Reviewed by: AGH

PROXIMITY TO FLOODPLAIN

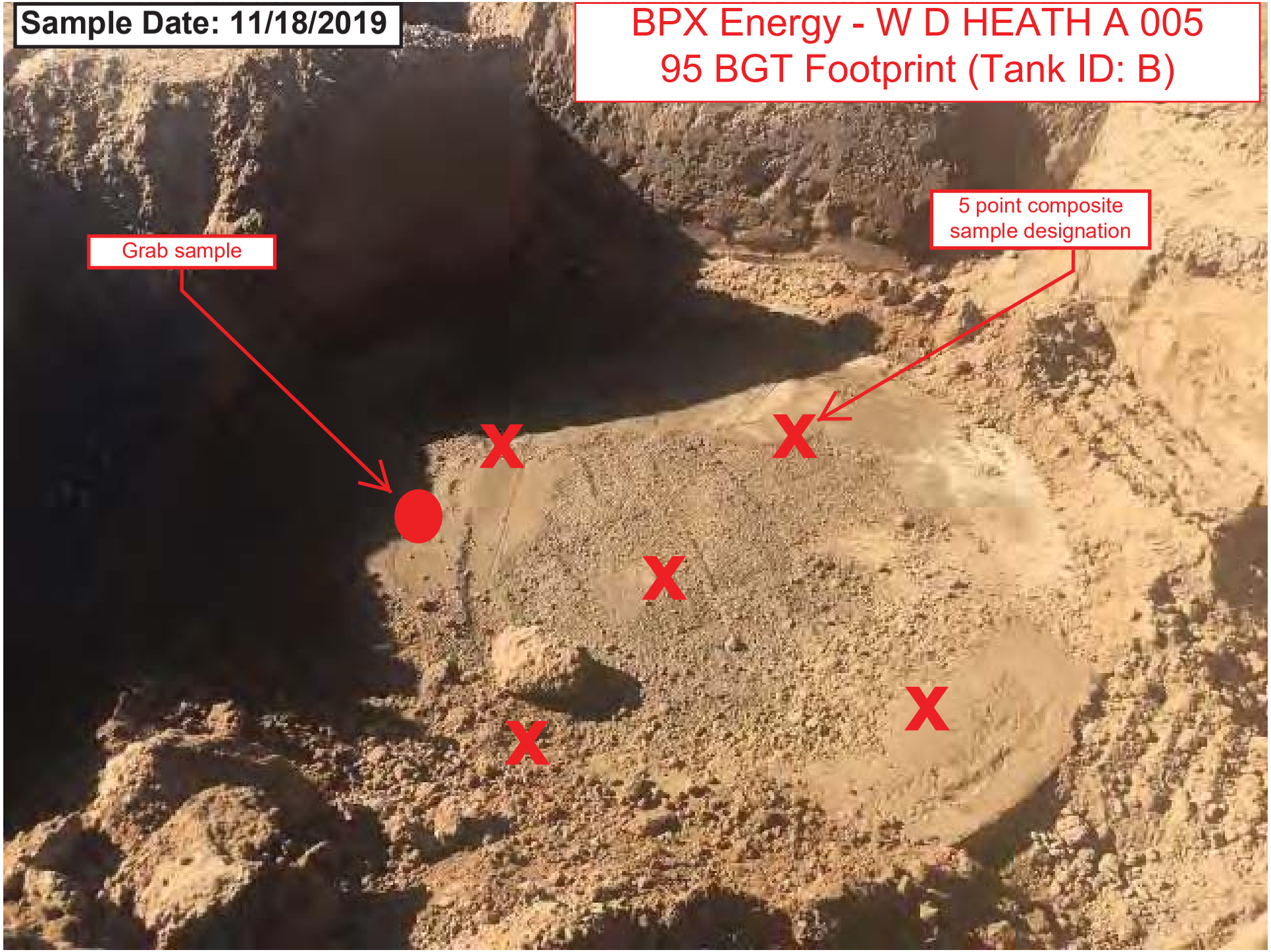
WELL NAME: W D HEATH A 005

API NUMBER: 3004508217 TANK ID: 3004508217B

SECTION 17, TOWNSHIP 29.0N, RANGE 09W, P.M. NM23

FIGURE 8


OR
505-947-9900
BP AMERICA PRODUCTION COMPANY
W D HEATH A 005
API 3004508217 LEASE NMSF076337
990 FSL 990 FEL (P) SEC 17 T29N R9W
San Juan County ELEV 5653
LAT 36° 43' 14.124"
LONG 107°47' 45.636"



envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: BP America Production Co.

Samples Received: 11/18/2019
Job Number: 03143-0424
Work Order: P911080
Project Name/Location: W D HEATH A 005

Report Reviewed By: Walter Hinchman, Laboratory Director

Date: 11/20/19

NELAP ACCREDITED TNI LABORATORY

Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:15

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
5PC - TB @ 5' (95)	P911080-01A	Soil	11/18/19	11/18/19	Glass Jar, 4 oz.

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:15

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1947008 - Purge and Trap EPA 5030A										
Blank (1947008-BLK1)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	*8.17*		*"*	*8.00*		*102*	*50-150*			
LCS (1947008-BS1)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	4.80	0.0250	mg/kg	5.00		96.0	70-130			
Toluene	4.95	0.0250	"	5.00		98.9	70-130			
Ethylbenzene	4.88	0.0250	"	5.00		97.7	70-130			
p,m-Xylene	9.72	0.0500	"	10.0		97.2	70-130			
o-Xylene	4.85	0.0250	"	5.00		97.0	70-130			
Total Xylenes	14.6	0.0250	"	15.0		97.1	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*8.33*		*"*	*8.00*		*104*	*50-150*			
Matrix Spike (1947008-MS1)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	4.89	0.0250	mg/kg	5.00	ND	97.7	54.3-133			
Toluene	5.05	0.0250	"	5.00	ND	101	61.4-130			
Ethylbenzene	5.00	0.0250	"	5.00	ND	100	61.4-133			
p,m-Xylene	9.94	0.0500	"	10.0	ND	99.4	63.3-131			
o-Xylene	4.98	0.0250	"	5.00	ND	99.6	63.3-131			
Total Xylenes	14.9	0.0250	"	15.0	ND	99.5	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*8.34*		*"*	*8.00*		*104*	*50-150*			
Matrix Spike Dup (1947008-MSD1)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	4.83	0.0250	mg/kg	5.00	ND	96.7	54.3-133	1.06	20	
Toluene	5.02	0.0250	"	5.00	ND	100	61.4-130	0.522	20	
Ethylbenzene	4.98	0.0250	"	5.00	ND	99.6	61.4-133	0.427	20	
p,m-Xylene	9.91	0.0500	"	10.0	ND	99.1	63.3-131	0.304	20	
o-Xylene	4.97	0.0250	"	5.00	ND	99.5	63.3-131	0.148	20	
Total Xylenes	14.9	0.0250	"	15.0	ND	99.3	63.3-131	0.252	20	
Surrogate: 4-Bromochlorobenzene-PID	*8.42*		*"*	*8.00*		*105*	*50-150*			

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:15

Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1946050 - DRO Extraction EPA 3570										
Blank (1946050-BLK1)				Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	*51.3*		*"*	*50.0*		*103*	*50-200*			
LCS (1946050-BS1)				Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	484	25.0	mg/kg	500		96.8	38-132			
Surrogate: n-Nonane	*47.8*		*"*	*50.0*		*95.7*	*50-200*			
Matrix Spike (1946050-MS1)	**Source: P911079-01**			Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	493	25.0	mg/kg	500	ND	98.6	38-132			
Surrogate: n-Nonane	*51.0*		*"*	*50.0*		*102*	*50-200*			
Matrix Spike Dup (1946050-MSD1)	**Source: P911079-01**			Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	557	25.0	mg/kg	500	ND	111	38-132	12.2	20	
Surrogate: n-Nonane	*51.5*		*"*	*50.0*		*103*	*50-200*			

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:15

Nonhalogenated Organics by 8015 - GRO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1947008 - Purge and Trap EPA 5030A										
Blank (1947008-BLK1)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.73*		"	*8.00*		*84.1*	*50-150*			
LCS (1947008-BS2)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	48.4	20.0	mg/kg	50.0		96.9	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.73*		"	*8.00*		*84.2*	*50-150*			
Matrix Spike (1947008-MS2)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	49.7	20.0	mg/kg	50.0	ND	99.4	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.82*		"	*8.00*		*85.2*	*50-150*			
Matrix Spike Dup (1947008-MSD2)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	49.8	20.0	mg/kg	50.0	ND	99.6	70-130	0.293	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.85*		"	*8.00*		*85.6*	*50-150*			

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BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:15

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1947002 - Anion Extraction EPA 300.0/9056A										
Blank (1947002-BLK1)				Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	ND	20.0	mg/kg							
LCS (1947002-BS1)				Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	252	20.0	mg/kg	250		101	90-110			
Matrix Spike (1947002-MS1)		**Source: P911065-01**		Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	7270	100	mg/kg	250	7980	NR	80-120			M4
Matrix Spike Dup (1947002-MSD1)		**Source: P911065-01**		Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	7670	100	mg/kg	250	7980	NR	80-120	5.29	20	M4

QC Summary Report
Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values my differ slightly.

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:15

Notes and Definitions

M4	Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
**	Methods marked with ** are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.

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Analytical Laboratory

Analytical Report

Report Summary

Client: BP America Production Co.

Samples Received: 11/18/2019
Job Number: 03143-0424
Work Order: P911079
Project Name/Location: W D HEATH A 005

Report Reviewed By: Walter Hinchman Date: 11/20/19

Walter Hinchman, Laboratory Director

NELAP ACCREDITED TNI LABORATORY

Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
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BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:14

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Grab @ 5' (95)	P911079-01A	Soil	11/18/19	11/18/19	Glass Jar, 4 oz.

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:14

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1947008 - Purge and Trap EPA 5030A										
Blank (1947008-BLK1)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	*8.17*		*"*	*8.00*		*102*	*50-150*			
LCS (1947008-BS1)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	4.80	0.0250	mg/kg	5.00		96.0	70-130			
Toluene	4.95	0.0250	"	5.00		98.9	70-130			
Ethylbenzene	4.88	0.0250	"	5.00		97.7	70-130			
p,m-Xylene	9.72	0.0500	"	10.0		97.2	70-130			
o-Xylene	4.85	0.0250	"	5.00		97.0	70-130			
Total Xylenes	14.6	0.0250	"	15.0		97.1	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*8.33*		*"*	*8.00*		*104*	*50-150*			
Matrix Spike (1947008-MS1)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	4.89	0.0250	mg/kg	5.00	ND	97.7	54.3-133			
Toluene	5.05	0.0250	"	5.00	ND	101	61.4-130			
Ethylbenzene	5.00	0.0250	"	5.00	ND	100	61.4-133			
p,m-Xylene	9.94	0.0500	"	10.0	ND	99.4	63.3-131			
o-Xylene	4.98	0.0250	"	5.00	ND	99.6	63.3-131			
Total Xylenes	14.9	0.0250	"	15.0	ND	99.5	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*8.34*		*"*	*8.00*		*104*	*50-150*			
Matrix Spike Dup (1947008-MSD1)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Benzene	4.83	0.0250	mg/kg	5.00	ND	96.7	54.3-133	1.06	20	
Toluene	5.02	0.0250	"	5.00	ND	100	61.4-130	0.522	20	
Ethylbenzene	4.98	0.0250	"	5.00	ND	99.6	61.4-133	0.427	20	
p,m-Xylene	9.91	0.0500	"	10.0	ND	99.1	63.3-131	0.304	20	
o-Xylene	4.97	0.0250	"	5.00	ND	99.5	63.3-131	0.148	20	
Total Xylenes	14.9	0.0250	"	15.0	ND	99.3	63.3-131	0.252	20	
Surrogate: 4-Bromochlorobenzene-PID	*8.42*		*"*	*8.00*		*105*	*50-150*			

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:14

Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1946050 - DRO Extraction EPA 3570										
Blank (1946050-BLK1)				Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	*51.3*		*"*	*50.0*		*103*	*50-200*			
LCS (1946050-BS1)				Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	484	25.0	mg/kg	500		96.8	38-132			
Surrogate: n-Nonane	*47.8*		*"*	*50.0*		*95.7*	*50-200*			
Matrix Spike (1946050-MS1)	**Source: P911079-01**			Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	493	25.0	mg/kg	500	ND	98.6	38-132			
Surrogate: n-Nonane	*51.0*		*"*	*50.0*		*102*	*50-200*			
Matrix Spike Dup (1946050-MSD1)	**Source: P911079-01**			Prepared & Analyzed: 11/18/19 1						
Diesel Range Organics (C10-C28)	557	25.0	mg/kg	500	ND	111	38-132	12.2	20	
Surrogate: n-Nonane	*51.5*		*"*	*50.0*		*103*	*50-200*			

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:14

Nonhalogenated Organics by 8015 - GRO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1947008 - Purge and Trap EPA 5030A										
Blank (1947008-BLK1)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.73*		"	*8.00*		*84.1*	*50-150*			
LCS (1947008-BS2)				Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	48.4	20.0	mg/kg	50.0		96.9	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.73*		"	*8.00*		*84.2*	*50-150*			
Matrix Spike (1947008-MS2)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	49.7	20.0	mg/kg	50.0	ND	99.4	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.82*		"	*8.00*		*85.2*	*50-150*			
Matrix Spike Dup (1947008-MSD2)		**Source: P911080-01**		Prepared: 11/18/19 1 Analyzed: 11/18/19 2						
Gasoline Range Organics (C6-C10)	49.8	20.0	mg/kg	50.0	ND	99.6	70-130	0.293	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*6.85*		"	*8.00*		*85.6*	*50-150*			

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:14

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1947002 - Anion Extraction EPA 300.0/9056A										
Blank (1947002-BLK1)				Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	ND	20.0	mg/kg							
LCS (1947002-BS1)				Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	252	20.0	mg/kg	250		101	90-110			
Matrix Spike (1947002-MS1)		**Source: P911065-01**		Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	7270	100	mg/kg	250	7980	NR	80-120			M4
Matrix Spike Dup (1947002-MSD1)		**Source: P911065-01**		Prepared: 11/18/19 0 Analyzed: 11/18/19 1						
Chloride	7670	100	mg/kg	250	7980	NR	80-120	5.29	20	M4

QC Summary Report
Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values my differ slightly.

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Analytical Laboratory

BP America Production Co.	Project Name:	W D HEATH A 005	
PO Box 22024	Project Number:	03143-0424	**Reported:**
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	11/20/19 13:14

Notes and Definitions

M4	Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
**	Methods marked with ** are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.

SOUTHERN SAN JUAN BASIN (SSJB)

Figure Citation List

March 2010

Figure 1: Groundwater Less Than 50 ft.

Layers:

Water Wells: **iWaters Database: NMOSE/ISC (Dec. 2009)**

New Mexico Office of the State Engineer (OSE) /ISC iWaters database. (Data updated: 12/2009. Data received: 03/09/2010). Data available from: http://www.ose.state.nm.us/waters_db_index.html.

Cathodic Wells: **Tierra Corrosion Control, Inc. (Aug. 2008)**

Tierra Corrosion Control, Inc. 1700 Schofield Ln. Farmington, NM 87401. Driller's Data Log. (Data collected: All data are associated with cathodic protection wells installed at BP facilities between 2008-2009. Data received: 05/06/2010).

Hydrogeological Evaluation: **Wright Water Engineers, Inc. (2008)**

Evaluation completed by Wright Water Engineers, Inc. Durango Office. Data created using digital statewide geology at 1:500,000 from USGS in combination with 10m Digital Elevation Model (DEM) from NRCS. (Data compiled: 2008.)

Results: Spatial Polygons representing "Groundwater likely to be less than 50 ft." and "Groundwater suspected to be less than 50 ft.".

Surficial Geology: **USGS (1963/1987)**

Data digitized and rectified by Geospatial Consultants. (Data digitized: 03/23/ 2010). Original hard copy maps sourced from United States Geological Survey (USGS). Data available from: http://pubs.er.usgs.gov/.

Geology, Structure and Uranium Deposits of the Shiprock Quadrangle, New Mexico and Arizonia. 1:250,000. I - 345. Compiled by Robert B. O'Sullivan and Helen M. Beikman. 1963.

Geologic Map of the Aztec 1 x 2 Quadrangle, Northwestern New Mexico and Southern Colorado. 1:250,000. I - 1730. Compiled by Kim Manley, Glenn R. Scott, and Reinhard A. Wobus. 1987.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name: NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 2: Proximity to Watercourses

Layers:

Perennial Streams: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital Representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

Intermittent Streams: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital Representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

Water Bodies: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

USGS Topographic Maps: **USGS (2007)**

USGS 24k Topographic map series. 1:24000. Maps are seamless, scanned images of USGS paper topographic maps. Data available from: http://store.usgs.gov.

Figure 3: Proximity to Permanent Structure

Layers:

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name:
NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 4: Proximity to Water Wells

Layers:

Water Wells: **iWaters Database: NMOSE/ISC (Dec. 2009)**

New Mexico Office of the State Engineer (OSE) /ISC iWaters database. (Data updated: 12/2009. Data received: 03/09/2010). Data available from: http://www.ose.state.nm.us/waters_db_index.html.

Springs/Seeps: **NHD, USGS (2010)**

National Hydrography Dataset (NHD). U.S. Geological Survey. (Data last updated: 02/19/2010. Data received: 03/09/2010). High-resolution: 1:24,000. Digital representation of USGS 24k Topographic map series with field updates as required. Data available from: http://nhd.usgs.gov/.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name: NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 5: Proximity to Municipal Boundary

Layers:

Municipal Boundary: **San Juan County, New Mexico (2010)**

Data provided by San Juan County GIS Division. (Data received: 03/25/2010).

Shaded Relief: **NED, USGS (1999)**

National Elevation Dataset (NED). U.S. Geological Survey, EROS Data Center. (Data created: 1999. Data downloaded: April, 2010). Resolution: 10 meter (1/3 arc-second). Data available from: http://ned.usgs.gov/.

StreetMap North America: **Tele Atlas North America, Inc., ESRI (2008)**

Data derived from Tele Atlas Dynamap/Transportation North America, version 5.2. (Data updated: annually. Data series issue: 2008).

Figure 6: Proximity to Wetlands

Layers:

Wetlands: **NWI (2010)**

National Wetlands Inventory (NWI). U.S Fish and Wildlife Service. (Data last updated: 09/25/2009. Data received: 03/21/2010). Data available from: http://www.fws.gov/wetlands/.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name:
NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 7: Proximity to Subsurface Mine

Layers:

Subsurface Mine: **NM Mining and Minerals Division (2010)**

New Mexico Mining and Minerals Division. (Data received: 03/12/2010). Contact: Susan Lucas Kamat, Geologist. Provided PLSS NM locations (Sections) for the two subsurface mines located in San Juan and Rio Arriba counties.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name:
NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.

Figure 8: Proximity to FEMA Floodplain

Layers:

FEMA Floodplain: **FEMA (varying years)**

Data digitized and rectified by Wright Water Engineers, Inc. (Data digitized: August 2008). Digitized from hard copy Flood Insurance Rate Maps (FIRMs) (varying years) of San Juan County.

Aerial Imagery: **Conoco (Summer 2009)**

ConocoPhillips Company. (Flown: Summer 2009). 12 in. High Resolution Orthoimagery. Projected coordinate system name:
NAD_1983_StatePlane_New_Mexico_West_FIPS_3003_Feet.

Provided as tiled .tiff images and indexed using polygon index layer.